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PRINCIPLES UNDERLYING THE CLASSIFICATION OF DISEASES OF THE NERVOUS SYSTEM

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Classifications have value as offering a sort of condensed résumé of existing attitudes of mind with reference to the nature and relations of the things classified, and also serve as a concrete setting forth of concepts, which, but for the effort, would tend to linger indefinitely in older settings. The nervous system was considered for a long time as a thing apart, a sort of consecrated territory, where only the initiated could be received; and as for its relations to the body, the latter largely existed to permit of those activities, while its mysteriousness was added to by being the repository for much that was not understood.

The mind was relegated to a place still further apart, and was dealt with metaphysically until its relations to the nervous system were much more vague than the relations of the nervous system to the rest of the body. This state of affairs has been crystallized by the titles of our textbooks, which set forth that they deal with nervous and mental diseases, inferring that these two groups have little relation, the one to the other, and, by the same token, fail to indicate that they either or both have any relation to the rest of the body.

All this is wrong. The human individual is a biologic unit, his several parts are parts of that unity, and he himself is still part of a greater whole, a particular instance of the manifestations of life. Any system of classification, no matter how far it attempts to go in formulating distinct disease trends, should not fail altogether to permit the broader view of the interrelations to show through.

From the point of view of the nervous system, how is this to be done? Recent developments in physiology and internal medicine point the way. Reference is made to the development in knowledge of the vegetative nervous system and the endocrine glands. These developments have served the twofold purpose of bringing the several functions of man into a closer knit harmony and at the same time correlating that harmony with the manifestations of the organic activities as found in lower animals. The last has been the result because the developments have had to do with what are called lower, simpler or, more properly, phylogenetically older forms of activity, or modes of reaction.

Right here, in the term "phylogenetically older," is the key to the principle of classification—a principle that has long governed in the biologic sciences, the simpler and older merging by insensible gradations into the more complex and more recent. It has taken long periods of time and the accumulation of great masses of detailed observations before these facts of wider bearing have emerged that have served to bring all this material together under wider generalizations. The older hypotheses have become more and more inadequate; in their prime they were useful, but like all hypotheses, their present aspect of tawdriness is only a sign of progress.

For a long time it has been asserted that the nervous system is the means by which all of the several parts of the human unit are integrated, by a species of complicated adjustments to given ends. It can be now perceived through the means of the vegetative nervous system and the chemical regulators of metabolism, at the physicochemical level, and the successive compounding of reflexes at the sensorimotor level, how this integration is actually brought to pass, and it is being understood how the human unit is integrated as a whole, and as a whole works consistently toward broadly defined goals, the integration manifesting itself at successively higher and higher levels in the history of the individual and of the species.

Viewed in this way, we see the individual struggling along the path of evolution in constant conflict between an inherent inertia that would keep it at a given level, but gradually advancing by a series of give and take compromises that finally bring it to better adjustment to its environment at a higher level of integration.

Sherrington has beautifully illustrated this integrative action of the nervous system in the simple reflex with its innervation of agonists on the one hand and antagonists on the other, and the channeling of final common pathways for nervous discharge. The conflicting tendencies, the ambivalency, the path of opposites — the final issue in high integrations made possible by tension of reciprocal innervations at sensorimotor levels — is found also to be the rule in the vegetative nervous system, that phylogenetically older division, with its double set of pharmacodynamically demonstrated opposed elements mediated, at least in part, by equally opposed, exciting and inhibiting chemical substances secreted by the endocrine glands, the hormones.

Finally an analogous ambivalent mechanism is seen working at the highest, the most complex levels, the psyche, which determines conduct with the assistance of the phenomena called consciousness, in which a psychologic symbolism is found replacing sensory and motor neurons, and exciting and inhibiting hormones.

For pragmatic purposes, then, the nervous system may be divided into these three levels of activity, the vegetative or physicochemical, the sensorimotor and the psychic or symbolic.

This threefold division of the reactions of the nervous system is the fundamental basis on which a classification may be founded. The biologic activities which maintain life at the lowest level are physical and chemical, and so that portion of the nervous system which has directly controlling influences over these activities is properly designated as the vegetative nervous system, and that part of neurology which has to do with a consideration of these physicochemical systems, because it deals with the nervous control of the viscera, is properly designated as visceral neurology.

In the region of visceral neurology a rich variety of disturbances is found, involving the glandular, gastrointestinal, genito-urinary, vascular, respiratory, muscular, cutaneous and bony systems, and in addition certain complex clinical groups involving, for the most part, the glands of internal secretions, the endocrinopathies.

Here is a rich field which has been unequally cultivated since Brown-Séquard first tried to discover the fountain of youth in the testicular extracts.

While the symptomatology of the neurologic disturbances of the tear, mucous and salivary glands is a limited one, a very rich symptomatology has grown up about the vascular system in the group of vasomotor neuroses. There is also a rich field in various directions, for example, in the gastro-intestinal and in the cutaneous disorders, which, however, are for the most part taken over by the specialties dealing with these respective systems, but which nevertheless will receive an adequate explanation only through the teaching of visceral neurology. Some portions of the field are as yet too little known to offer much that is of value, as, for example, the neurology of the bony system and the nervous mechanisms underlying the regulation of the blood cells, while in other systems the disturbances are known only as contributing symptoms in fairly well-defined clinical groups, as, for example, myasthenia gravis as a disturbance of the muscle vegetative mechanisms. The endocrinopathies naturally form a considerable part of visceral neurology, and many of the disturbances of the several systems are still best included in the various clinical groups that are considered as due to disturbances in one or more of the endocrine glands. This field today occupies the main focus of attention of the medical practitioners, and much that is false is being taught; but out of the divergent trends sound harmonies will be evolved.

If the vegetative nervous system has for its function in the main the maintenance of the vegetative, that is, the metabolic processes of life, such as nutrition, growth, development and sexual maturation, the next higher level, the sensorimotor, has as its function, in the main, further integration by providing the means for the balanced interrelations of the various organs of the body. It has to provide that all the various parts of the machine work harmoniously together, that the functions of the various organs are not only properly timed in relation one to the others, but also adequately related on the basis of the functional demands made on them.

This field of sensorimotor neurology, including the disorders of the cranial and peripheral nerves, the spinal cord, pons, brain stem, midbrain, cerebellum and cerebrum, is that portion of neurology to which the term "neurology" is generally thought of as applying, to all intents and purposes, exclusively. Here the field is pretty well cultivated, and the classification based on the anatomic divisions as just outlined pretty well accepted.

The third, the highest, the psychic level is the most complex. Its function is no longer simply one of integration of the various parts of the individual but at its highest, conscious level it has to do with the relation of the individual as a whole to his environment and more especially to his social environment.

At this level it has been the prevalent custom to think only of consciousness, and of conduct consciously regulated by intelligence. Ideas are symbols; they are symbols of the contemplated action on things through which the individual comes to an efficient adjustment with his environment by controlling them. The symbol becomes, therefore, a carrier of energy which is translated into conduct.

The ways in which these psychic symbolizations work at the highest conscious levels is pretty well formulated in current psychology, and these ways work very well so long as there is nothing unusual the matter with the whole machine. The great error of the psychologist, however, has been to suppose that the matter stopped here. The lower animals exhibit most complex forms of behavior without its being thought necessary to ascribe conscious motives (intelligence) to them in explanation. Very complicated activities low down in the biologic scale are ascribed to tropisms, while for man it has been supposed that what he did he consciously intended. Recent studies in psychopathology have changed all this, and it is thoroughly well established that lying back of consciousness is a much larger, a much more important territory which furnishes psychic motivation of conduct, and, in fact, that conscious processes as they are known to the individual are largely, if not altogether, determined by what lies in this region — the unconscious.

Psychic symbols — ideas, feelings — must therefore be traced farther back than the conscious level at which the individual is acquainted with them in order to understand their real meanings. Psychanalysis is as important for the understanding of the construction of the psyche as dissection is for the understanding of the body, or chemical analysis for the understanding of the constitution of the molecule.

The greatest deficiency in the psychology of the nineteenth century relative to the understanding of human conduct has been the neglect of the importance of the unconscious.

For centuries man has marveled and speculated and gathered observations concerning the exquisite subtleties of adaptation of plant structures to their environment. The four-volume epitome of Körner von Marilaun sets before the eyes of the nature lover the merest indications of the manifold activities in this field. Students of nature — to mention only the list of names from Aristotle to Fabre, would fill a volume — have recorded in encyclopedic proportions the intricacies of nature's story of the conduct of the lower animals from protozoa to highest ape. These activities are relegated to tropisms and to instincts. Man alone supposes he can explain his own conduct by reference to that which appears in his consciousness, unmindful of the millions of years of evolution preceding that which he has designated as his conscious activities.

With the help of the hypothesis of the unconscious, however, it has come to be recognized that the psyche has its embryology and its comparative anatomy — in short, its history — just as the body has, and in precisely the same way as in the care of the body this history has to be utilized before we can understand it.

So long as the unconscious failed to be recognized, just so long was the gap between so-called body and so-called mind too wide to be bridged, and so there arose the two concepts, body and mind, which gave origin to the necessity of defining their relations. Consciousness covered over and obscured the inner organs of the psyche just as the skin hides the inner organs of the body from vision. But just as a knowledge of the body first became possible by the removal of the skin and the revealing of the structures that lay beneath, so a knowledge of the psyche first became possible when the outer covering of consciousness was penetrated and what lay at greater depth was revealed. As soon as this was done, the wonderful history of the psyche began to give up its secrets, and the distinction between body and mind began to dissolve, until now it has come to be considered that the psyche is the end-result in an orderly series of progressions in which the body has used successively more complex tools to deal with the problems of integration and adjustment. The hormone is the type of tool at the physicochemical level, the reflex at the sensorimotor level, and finally, the symbol at the psychic level.

In the phylogenetic history of that development which culminates in man, the symbol has been developed after trying and laying aside in the past all other tools, because it alone offers the means of unlimited development of man's control over nature. The hormone, the reflex, are confined in their capacities for reaction within relatively narrow limits of possibilities. The symbol is capable of infinite change and adjustment, and so has grown out of the necessity created by ever increasing demands. The growth from the lowest to the highest, from the youngest to the oldest, from the simplest to the most complex has been here, as everywhere in nature, without gaps.

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THE PHILOLOGY OF HYSTERIA

AN A PRIORI STUDY OF THE NEUROSES IN THE LIGHT OF FREUDIAN PSYCHOLOGY

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The most startling advance that has been made of late years in the domain of mental medicine is the discovery that psychic disorders—the more popularly designated "nervous" disorders—embody a concealed moral conflict due to the survival in an unconscious form of racial instincts and emotions which are no longer compatible with the ethical tendencies of the personality and which therefore have been repressed by the collective social consciousness. It is the reassertion of these long repudiated trends in the midst of our present day civilization, together with the attendant inner conflict, that is now regarded as the fundamental factor in these disturbed psychic states.

In his work "Adolescence," published in 1905, in which he announces to English readers the trend of the recent investigations of abnormal psychology in regard to hysteria and allied disorders, Dr. Stanley Hall says:

> Mental pain becomes local neuralgia, moral disgust becomes nausea, anxiety becomes contraction or cramp, if shunted downward, and so through a long list of psychophysic kinetic equivalents which with all their wealth of symbolism is yet to be fully worked out. Such metamorphoses constitute the mystery of the domestic demon of hysteria and account for many adolescent symptoms.

At the time that Dr. Hall wrote this sentence the meaning of the disorders to which he referred had not as yet, as he said, been fully worked out. Indeed, the conception which presupposed that a psychologic meaning lay back of these disorders had been only recently advanced. To apply to nervous disorders the concept of "meaning" in any psychologic sense is to interpret these manifestations in the light of a purpose, of an intention, of a process pursuant to an end. It is to recognize in these disorders an effort toward the fulfilment of design. It is to ascribe to these processes the operation of human personality. Thus with a deeper insight into the causation of neurotic states, science has been compelled to divest itself of its materialistic dogmatism and to reckon at last with the fundamental element of will.

This revolutionary trend owes its special impetus to the researches of the European neurologist, Sigmund Freud, ably furthered by the brilliant studies of the Swiss psychologist, C. G. Jung; and to those broad biologic interpretations introduced into the field of mental pathology through the teachings of Adolf Meyer. It may be said unhesitatingly that the entrance of this conception into the study of nervous disorders marks the beginning of the most important epoch in the history of modern medicine. It is called the dynamic conception.

Through this altered conception, medicine has taken on a very different aspect in regard to what is perhaps its widest and most significant field. Into this field there are now introduced measurements, valuations and criteria of a totally new and different order. From this new angle of observation, physicians are brought face to face with the vital problems of human character. They begin to see more clearly into the deeper springs of motive and of conduct and so are acquiring a more intelligent and sympathetic understanding of the forces which lie back of and determine human needs, human growth, human adaptation, human life. Medicine now includes among its data expressions indicative of the demands of the instinctive life. It takes cognizance at last of such very real factors as "the hunger of the human heart," not in any rhapsodic literary sense, but lifted out of its poetic context and transposed to its rightful setting amid the archives of science. The result is that today the consulting rooms of the psychopathologist have become special laboratories in which the physician is engaged in the analysis of those elements of the personality which constitute that totality of experience we know as life.

It will be readily understood that in the reconstruction of the shattered purposes, the frustrated hopes and the outraged instincts which are found to lie at the source of those human woes we call "nervous disorders," there takes place a gradual transposition of values, a total recasting of ideas, and that, through this process, education in the deepest meaning of the word enters at last into its full and sovereign rights.

In view of the vast importance for the communal weal of this complete change of front on the part of abnormal psychology, it is eminently worth while to

consider carefully the basic principle that underlies this dynamic conception of nervous disorders as exemplified in the sentence of our text. "Mental pain becomes local neuralgia, moral disgust becomes nausea, anxiety becomes contraction or cramp. . . ." Here we have the phenomenon of a psychic emotion being relayed into a physical equivalent. This process Freud calls the "mechanism of conversion." This principle of conversion is the crux of Freud's psychology of the neuroses.

When we come to study the philosophy of this principle it is after all quite simple. The wonder is that we could have closed our eyes these many years to anything so obvious. Indeed, the sluggishness of our perception in this connection is only explicable on the plea of our habitual bondage to traditional bias. So that when we consider it we cannot help wondering what still newer and clearer truths are even now perhaps at our very hand, when we shall have sufficiently overcome the prejudice of our customary thought habits to view them in their unconventional simplicity.

There is somewhere a passage in "The Mill on the Floss" in which George Eliot remarks that it is indeed a noteworthy fact that through some peculiar faculty of the human mind, whenever we wish to say what a thing is, instead of stating directly what it *is*, we keep forever saying what it is *like*. Nietzsche expresses the same thing when he says: "Every idea originates through equating the unequal." In such statements there is embodied the fundamental principle of human psychology.

The essence of language consists in the statement of resemblance. The expression of human thought is an expression of association. Every idea whether felt or conveyed entails such an association. Thought is the recognition of likeness, language is the expression of likeness. Human thought and human language represent thus the gradual building up of an increasingly complex system of associations. All that human thought ever attains to, as represented through the various mediums of human intercourse, whether in the earliest monosyllabic utterances of the young infant or in the condensed and intricate formulations of the man of science—all these manifestations, when reduced to their psychologic elements, are found to consist of *associations of similarity.*

If we will trace back to the earliest philologic sources, we find that the language of primitive man was mimetic. That is to say, man's earliest attempts toward communication or the establishment of associations consisted of movements of mimicry or imitation, whether vocal or gesticulatory. The vestiges of this pantomimic speech of prehistoric man are directly traceable in many of the linguistic forms of present day usage. The stage of vocal mimicry is preserved today in the use of onomatopoeic words, representing through imitation the original sound of the object described; for example, the "tick" of a clock, the "rustling" of leaves, the "bubbling" of a spring, the "click" of a latch, the "humming" of an insect.[1]

This primitive language of the race is equally preserved in the gesticulatory symbols with which we today express our thought—symbols in which we find the origin of the early drama. We give expression to a sense of disgust or of a bad taste through an instinctive turning away of the head, or a wry face, or through thrusting the hands outward, with palms everted—a gesture clearly suggestive of pushing something from us. What is so suggestive of unconcern as a shrug of the shoulders? And why? Because this dramatic movement is a mimetic symbol for throwing off the burden of responsibility. Primitive man carried his burden on his shoulders—his fuel, his food, his offspring.[2] His shoulders then were not light, not free. They were borne down by these man's elemental cares.[3] And so in this familiar shrug of the shoulders there are retained the philologic traces of the primitive language of our forebears. And man today expresses through this symbol his freedom from concern or his indifference,[4] as we say. If we turn to the study of the more obviously biologic mediums of language—to the expressions of the emotions in men and animals as pointed out by Darwin, the organic appropriateness of these reactions becomes more evident still.[5]

We see, then, that language is not haphazard or arbitrary. We see that a dynamic element underlies its manifestations, that it is actuated from the inner necessity of organic law, that it is prehistoric, inherent, unconscious, physiologic. Because of this organic inherence of our unconscious language, its testimony is indisputable. And so we are enabled to judge the characters of men through their use of such unconscious mimetic expressions. The honest man looks you calmly in the eye. He does so in response to a law of his very nature. Out of obedience to this same law, we in turn call such a man "upright," "straight." Conversely, from the same organic necessity, the deceitful man is, as we say, "shamefaced." He must perforce crouch and turn aside. He dares not confront you squarely, and for such a man the popular epithet is "crooked." Thus everything that a man is is proclaimed in everything that he does—his voice, his walk, his handwriting, his apparel, all are descriptive of himself because all *are* himself. "As a man thinketh, so is he." As Emerson says, "What you are speaks so loudly to me that I cannot hear what you say."

This connection between inner thought and outer action is so inherent and inseparable that any attempt to evade this inevitable law of self-expression causes a discrepancy in our organic reactions which straightway gives the lie to our conduct. If any one comes to you and tells you that he is honest and diligent, and at the same time lowers his eyes and holds his thumb close against the palm of his hand, do not believe him. There is a discrepancy between his words and the silent testimony of his unconscious utterances. Bulwer Lytton was psychologist enough to use to splendid

1. Language can produce no more powerful effect than through the conscious reversion to this elemental form. The reader will recall how Homer heightens the vividness of description in his classic line through the mimetic twang of the double gamma. One not only sees, but distinctly hears the arrow go singing through the air:

> ἕζετ' ἔπειτ' ἀπάνευθε νεῶν, μετὰ δ' ἶὸν ἕηκεν·
> δεινὴ δὲ κλαγγὴ γένετ' ἀργυρέοιο βιοῖο.
>
> —Iliad, Book I, Lines 48, 49.

2. Anglo-Saxon bairn = burden, or child.

3. In this connection it seemed to the writer that between the words "care" and "carry" there must be a fundamental psychobiologic correlation, but on looking into the etymology of these words, no direct evidence was found to sustain this view. Holding, however, to what he conceives to be an organic principle of philology, the question was referred to expert opinion, and it was learned that the sources of philology do indeed sustain this psychobiologic inference, for, through the collateral word "charge," "care" and "carry" are as a matter of fact etymologically related.

4. The word "indifference" again brings us back to the same biologic origin. On analysis it contains the Latin words "to bear," "carry," "support," and the negative prefix "in." Hence it is "not. . carrying," "not. . burdened."

5. In attitudes of attack or defense we find that an organism stiffens, because the stiffened muscle is harder, more resistant, more powerful. Contrariwise, in defeat and in flight, as Darwin has shown, there is the precisely opposite reaction; the organism shows suppleness, relaxation, the characteristic unresisting posture of surrender.

dramatic purpose this unconscious evidence of an inner organic disharmony. You remember in his play "Richelieu," how he makes the old cardinal save himself from death at the hands of assassins by detecting at the critical moment just such a discrepancy on the part of his trusted servant-in-waiting. You remember, as the man makes his usual obeisance and retires for the night, Richelieu, with quick intuition, perceives some difference in his demeanor—there is something unfamiliar, and turning to his secretary he says, "Joseph, he bowed too low." This man was harboring in his bosom a treacherous design. In his effort to conceal it he overdid his deference, he "overcompensated," as the psychologist would say, and in this very act he was betrayed.

Language teems with usages bearing organic implications. Such phrases as "broken-hearted," "dumb with amazement," "burning with shame," "choked with rage," "breathless with suspense," or, conversely, "a sigh of relief," are familiar instances of these organic expressions.

We see, then, that language is not to be divorced from nature, that it is a thing inherent, not accidental, and that it has arisen from organic necessity, and is thus biologic. So much for this principle of organic fidelity which underlies man's natural mediums of expression.

I have said that thought consists essentially of an assertion of likeness, that it is built up of associations or resemblances, and we have further seen that the human mind communicates its thought through recourse to metonymies, that it calls one thing by the name of something else resembling it, that language is built on analogies, that it is metaphorical. If we will observe carefully we shall find that there is very great latitude in our choice of analogies. Observing more closely still, we shall see that the farthest stretches of metaphor, that is, the highest degrees of distortion, are found to exist where moral and social prohibition enters most forcibly into the thought content. That is to say, the more disagreeable an idea, the more we seek to render it imperceptible or unconscious; the stronger the moral proscription, the more remote is the resemblance indicated; the stronger there enters the element of social interdiction, the more far-fetched or concealed is the linguistic symbol we employ to designate the thought in question.

The element of moral weakness that lies back of this tendency is plainly enough felt. It takes courage to call things by their true name. The man who, scorning obliquities, calls a spade a spade, straightway compels our respect. The general popularity, on the other hand, of the more roundabout course, is shown in the softer tone of intimation so universally adopted by the social mind. In the political cartoons we see this mechanism well illustrated. Under the disguise of a quite absurd and exaggerated drawing it becomes possible to express with impunity a sentiment of such hostility as would be seriously offensive and render the newspapers subject to libel were it put forth in the form of language commonly current.

The instances which mythology affords of such symbolic representations of the covert aspirations of primitive man form a chapter to themselves.[6] Such, too, we know today, is the stuff that dreams are made of. In these representations of our unconscious mind we find a regression to a primitive, archaic form of ideation, of which the essence is symbolism.[7] For in dreams are expressed allegories under which we symbolize the secret, morally inadmissible desires of our natures. In these unconscious charades we pay respect to those yearnings which the hard adaptations of our waking consciousness deny us.

Finally, the study of the anatomy of language itself shows this principle of disguise to be its very backbone. In our customary verbal usage there are innumerable instances of this device. The more nearly we approach forbidden territory — the territory on which popular social sentiment has imposed its moral embargo — the stronger is the tendency to conceal our meaning through recourse to remotely associated symbols of expression. To take a quite familiar example: what, on a superficial view, could be more utterly dissimilar than a red light and the commerce of prostitution? The word "prostitution," though, is flagrant, bold, shocking. It blazons the unpleasant, ruthlessly dragging before us the existence of a condition in society on which a moral stigma has been placed. The moral repugnance here entailed is patent enough. We therefore use instead a symbol which in its remoteness is apparently quite harmless. What could offer less outrage to our sensibilities than the concept "red light"? What could be more free from any immoral connotation? And so when the church, society or the press wishes to speak of the resorts of the social evil, it has recourse to this disguised and innocuous metaphor of the "red light," and with due regard for the proprieties it henceforth refers with an unruffled calm to the "red light district."

But let us see. Is this symbol as innocent as it appears? Is it after all so remote, so arbitrary; or does it prove on analysis to be connected with the concept for which it stands by reason of that organic correlation of which we have spoken? If we will look into the history of the social consciousness as expressed in the different spheres of symbolism, in folk-lore, in religion, in literature and in mythology, we find that redness and warmth are the universal symbols of passion and of lust; for example, we speak of the "heat of passion," the "fire of love." You remember the symbol of the Scarlet Letter, or, more closely still, the "scarlet woman," and the devil himself, the mythological symbol under which the carnal appetites are personified, is invariably pictured as clothed in red and as enveloped in flame. The metaphorical red light was not chosen at random then, but because of its organic relation to the concept which it symbolizes, and the "red light district" is therefore quite an apt phrase after all.

We see, then, that our human forms of expression are full of such roundabout expedients — such symbolic substitutions and evasions with which we seek to mitigate the poignancy of actuality.

Having considered the organic dynamism which in general underlies our human forms of communication, and having considered the principle whereby a concept is rendered less perceptible to consciousness in proportion to the degree of the moral repugnance of such concept, let us turn to the consideration of the psychologic meaning of the disorder we call hysteria.

We know it to be characteristic of hysteria that it defies definition and systematization; that it flouts all attempts at classification and description. Its forms are protean, its manifestations infinite in their variety.

6. Frazier, James George: The Golden Bough.

7. Freud: Die Traumdeutung.

There is no such thing as an adequate textbook of hysteria. There never can be. This disorder is not to be compassed within the bounds of any text. One might as soon attempt to reduce to the limits of a text the manifestations of life itself.

What, then, is hysteria? What is its meaning? Basing my thesis on the principles derived from researches into the psychology of this disorder as introduced by Freud, I contend that the same dynamic factor which we find to obtain in the development of language — the tendency of the human mind to disguise whatever is unpleasant — is the identical principle which actuates the development of the conditions which we recognize as hysteria, and that the same unconscious overcompensation which we saw a moment ago to be the inevitable outcome of the attempt to conceal the underlying purpose of one's conscious desire is the inherent account of the exaggerated manifestations of conduct which constitute the so-called symptoms of this disorder.[8]

We have seen the tendency of human consciousness to disguise whatever is unpleasant, to mitigate whatever is painful, and as it were to turn away from it through the adoption of a usage such as serves to lead the mind aside of the immediate issue. We have seen that to this end the human mind has recourse to metaphor, to metonymy, to the substitution of analogies, and that the implied resemblance in such figures is less articulate, less conscious in proportion to the moral proscription attaching to the original idea. We observed that the effort of concealment is attested by the increasingly subtle nature of the metaphor employed, that it grows most elusive with the approach to concepts bearing the strongest moral incrimination, and we have seen that this principle is a universal principle of consciousness.

When we come to test this principle with respect to the more organic needs of expression — the needs pertaining to the instinctive life of the organism — we find that, through the ultimata of society, the expressions of the instinctive life, particularly those pertaining to the instinct of sex, have been despotically deprived of legitimate language. The strongest instinct of life is forbidden free speech. Those socially integrative forces which tend toward the perpetuation of the species are ruthlessly repudiated and repressed. But there are instincts within us which will not be silenced. Their utterance is eternal. Their voice cries from out the depths of the remotest age of man. Such vital, biologic demands as belong to the sex instinct are among those impulses which are too dynamic to be wholly silenced. What is the recourse of the organism under the pressure of such an artificial ukase?

I maintain that there is here repeated once more the mechanism with which we have grown familiar — the mechanism to which human consciousness ever has recourse when it must give utterance to sentiments which have been ignorantly penalized under the code of social proscription. Being socially anathema, these impulses of the primitive instinctive life seek the only vent permissible under the existing censorship, and issue forth in disguised equivalents. They resort to obscurities, concealments, innuendos; to hidden symbolisms, strained metaphors, remote analogies, far-fetched metonymies, exaggerated similes; and the symptoms of the neurotic patient, with his agonizing fears, tantalizing doubts, abysmal depressions, compelling ceremonials, relentless imperatives and torturing obsessions are a witness to the mental agony which the enforcement of such organic discrepancies entails. For language, being here organic, expresses itself in organic terms, and there result those organic substitutions and distortions, which, as elsewhere, are relative in intensity to the moral repugnance pertaining to the ideas they symbolize.

Accordingly the mimetic movements into which the most vital meanings of the organism become thus converted in the neurotic subject — the neuralgias, the nauseas, the contractions, as Dr. Hall says, not to mention the paralyses, anesthesias, stammerings, mutisms, spasms and all the rest of these protean appearances — are the concealed expressions of vital outlawed trends. Distorted out of their original meaning, they represent organic metaphors analogous to the figurative disguises which we have seen to be a universal principle of language.

Of course the average wayfarer — the so-called normal individual — falls a ready prey to the moral compromise of metaphor and indirection which language affords. He accepts without protest whatever disfigurements of nature's verities society demands. And so, adopting the course of convention, he moves on with the popular tide. The "normal" man is not one to "battle and perish for a dream of good." In his bosom there rages no life and death struggle of an inherent conviction of right against the cowardice and falsehood of convention. Being average, he pursues the average course. Possessing no overrefined perceptions, no exaggerated sensitiveness to innate, organic truth, he follows without demur the ordained routine of things. It is the easiest way, this program of subterfuge, of compromise, of capitulation. But if we will observe our fellow human beings carefully, we shall find that here and there among them there are personalities of a finer, more delicate weave; more "sensitive personalities," as we say; men and women endowed somehow with a clearer intuition of truth, with a deeper sense of values than normally exists among us. It is characteristic of such personalities that they cannot comfortably permit themselves any such sinister evasions. Imbued with some innate fidelity, they cannot accept the course of compromise. The part of hypocrisy is utterly intolerable to them. Resolutely refusing to resign his birthright, such a personality serves with a faith that is cosmic the inner voice of organic law. Under the circumstances he is driven to adopt what seems the only honorable course open to him — that of rigid repression. He resolves to stifle completely this cry of an inherent instinct.

In consequence of the moral conflict from which no escape is offered it, such a personality becomes more and more deeply withdrawn, introverted and repressed, until life has at last become so wracked and inhibited as to be scarcely longer endurable. Such is the typical state of mind of a person suffering from a neurosis.[9]

8. The popular ruse to which language has recourse is nowhere better exemplified than in our custom of resorting to a foreign tongue as we approach the precincts on which society has impaled its moral taboo. Greek and Latin appear to afford an especially soothing unction for our social sensibilities. Such a form of palliation is to be seen in the name of the very disorder we are here considering. Hysteria means uterus or womb. We put it into Greek and suspect nothing, but as a matter of fact, through this politely disguised designation it is shown that the disorders of hysteria have been unconsciously felt all along to be allied to the generative organs and to the sexual instinct. And so here again we are forced by the same organic law of language to return to philological sources for the rediscovery of its inherent meanings.

9. Comparable to this reaction of the individual is the state of the social mind when, long cheated and denied, it suddenly issues forth in those periodic moods of defiance against form and authority which mark the history of revolutions.

When the manifestations of such a disordered mental state — the so-called "symptoms," the memory lapses, the habit-reactions, and above all the dreams of the patient — are subjected to psychanalysis, it is found that these manifestations of the personality are a secret code affording a clue to the nature of these inadmissible trends. We find on analysis that these expressions contain a remote association with such unseemly tendencies; that by virtue of its remoteness such tendencies have been rendered invisible, unconscious; and finally that the degree of distortion of such an associative disguise varies in direct ratio to the intensity of the moral repugnance of the trend thus symbolized. When an individual is disturbed by a phobia of which the content is, to cite a typical example, that his tailor has inadvertently left germs beneath the stitching about the buttonholes of his coat, it is found on analysis that the danger of infection is by no means his real concern, but that this apparent apprehension is a mere metaphorical or symbolic substitution designed to mitigate the moral repugnance of a far more poignant prepossession.

Here, then, we see, underlying the mental pathology of the neuroses, a repetition of the same mechanism of unconscious association which we have already studied in the methaphorical substitutions of language. There, we studied this mechanism in respect to the social aggregate. Here, we study it in respect to the individual unit.

We see, then, that hysteria is in a sense not so much a disease as a dilemma; that it represents an inherent conflict within the personality; that this conflict is due to a repression which in its essence involves an intolerable contradiction; that the contending elements assembled within the personality of the neurotic patient are, under the conditions of repression, rendered utterly irreconcilable. We have further seen that the distressing symptoms of the neuroses are an *unconscious metaphor* representing an enforced disguise whereby through repression the organism struggles to attain the mitigation of trends which are too vital and inalienable to be wholly denied. An analysis reveals thus an essentially similar psychologic mechanism between the formation of these mimetic symbols expressive of the drama of hysteria and the metaphorical symbols of language through which the drama of human life finds its expression.

It is because of this inherently human, psychologic meaning which is embodied in the neuroses and its genetic correlation with the original mediums of human expression that I have ventured to interpret hysteria as an expression of organic philology. To many undoubtedly this interpretation will seem to entail unwelcome implications. They will complain that my thesis posits an inherent duplicity as the fundamental principle of consciousness, and will bitterly resent so sweeping an indictment of the human mind. But if they will examine the matter more closely, they need be by no means inconsolable. For even though my indictment be true, it is but a part of the truth and by far the lesser part. For nowhere does nature proclaim more stoutly the essential truth of the human spirit than in precisely this organic revolt which underlies the conflict of emotions presented in those distorted expressions we call hysteria.

In this recoil of the mind against the artificial inculcation of false methods of valuation, it is seen that far deeper than all the artifices of temporary expedience lies the unalterable aspiration of the soul toward permanence and truth. Let men in their mistakenness contend as they will against their inherent natures, yet the organic verities within them will ultimately prevail. So that by whatever device we may seek to repress the energy of our instinctive needs, it will but reappear in the altered and concealed guise of some inexpugnable equivalent. Such is, I think, the account of those "metamorphoses" which constitute, as Dr. Hall says, "the mystery of the domestic demon of hysteria."

Regarding hysteria, then, as an expression of organic philology, as a straining of metaphor in the organic sphere, analogous to the strained figurative usage obtaining in the social sphere, the rationale of a method of correction which seeks, through the gradual reeducation of the will, to reconvert those distorted expressions now existing under the symbols of diseased symptoms into their original elements becomes clear. If the symptoms of hysteria represent in reality the distorted expressions of the wracked human soul, whose features have been twisted out of their natural semblance through the pain of inherent discord and denial, clearly the logical course is to reconvert such disguised equivalents into their original terms, by reestablishing in consciousness the true meanings which these figurative compromises have replaced.

To understand the expressions of the human organism presented under the aspect of "nervous disorders," we need to review the rudiments of language, to return to the philology of nature and of life and reread their meanings in the light of their original text. In the daily hurry of events we have no time for early sources, and so we have come to blunder miserably in our interpretation of the most important chapters of human evolution. How widespread is our ignorance of the grammar of mental biology may be directly gaged by the prevalence of this organic social error which is known medically as hysteria.

I believe that the hope of successfully combating this anomalous product of our artificial civilization lies in the clearer realization, on the part of thoughtful parents and educators as well as physicians, of the dynamic causes underlying this disorder, of its essentially human, psychologic basis, and of the necessary recourse to analysis and education as the rational method of readjustment.

Charles Street and Mount Vernon Place.

Trachoma.—The establishment of small hospitals for the treatment of trachoma is recommended in the annual report of the surgeon-general, U. S. P. H. S., as being the best means of combating this disease. Five trachoma hospitals have been established by the service in Kentucky, Virginia and West Virginia, and in the past fiscal year 12,000 patients were treated, most of whom were cured and the remainder improved, so that they will not be sources of infection to others. The hospitals established have also served as centers of education for the people of the surrounding communities, and the physicians and nurses connected with them have visited the homes of hundreds of families, instructing them how to prevent the disease, with the result also that the general hygiene of these communities has been improved. Surveys among schoolchildren in sixteen counties in Kentucky have shown among 18,000 examined that there was an incidence of 7 per cent. of the disease, and similar inspections in Arizona, Alabama and Florida disclosed the disease in from three to six out of every hundred children examined. Lectures and clinics before medical societies in localities where hospitals could not be established have also been features of the campaign against trachoma.

THE LATENT RÂLE IN THE DIAGNOSIS OF INCIPIENT TUBERCULOSIS *

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The term "latent" as here employed designates the râle elicited only by the aid of cough. Any originality is disclaimed in the use of the word latent to designate this type of râle, since Willison[1] and others have previously referred to râles elicited by cough as latent signs. In the majority of patients in the early stage of the disease, and in some instances of advanced disease, it is, to the exclusion of all others, the only râle heard. In both the early and the advanced types of lesion, it seems probable that râles of very feeble intensity are produced during forced respiration, which remain inaudible, latent or concealed until cough is employed. This theory receives support in those instances in which indistinct sounds suggesting râles on deep breathing are replaced by demonstrable râles after cough. Special contributions devoted to the diagnosis of incipient pulmonary tuberculosis have specifically indicated the value to be attached to this procedure (Turban,[2] Hess,[3] Reineboth,[4] Cornet,[5] Brown,[6] Pryor,[7] Otis,[8] Whitney,[9] Bandelier-Roepke,[10] Ogden,[11] Bonney[12]). Garvin[13] in a recent communication explains the procedure in detail and notes its value. Of interest in this respect was the advice imparted by the elder

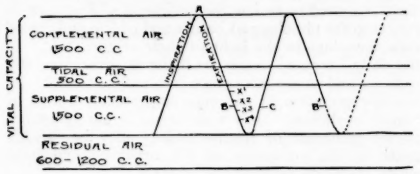

Fig. 1.—Diagram illustrative of the interpolation of the cough at different points in the respiratory cycle and the occurrence of râles following cough.

Janeway to his pupil, Trudeau,[14] about forty years ago, previous to the latter's memorable pilgrimage to the Adirondacks in search of health: "Invariably employ cough to elicit râles in tuberculosis."

The present study was undertaken to determine the incidence of râles before and after the act of coughing in incipient pulmonary disease, a study heretofore little considered, but which offers a means by which the diagnostic value of this procedure may be established. The statistics presented are based on a study of the physical examination of 226 patients at the New York State Hospital for Incipient Pulmonary Tuberculosis. The modification of Turban's classification adopted by the National Association for the Study

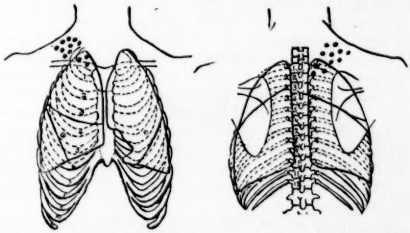

Fig. 2.—(Case 3449).—Tubercle bacilli present; illustrative of the latent râle area in incipient disease. In this group the latent râle alone is heard in 75 per cent. of the cases. Roentgenogram confirms the presence of a lesion at the right apex.

and Prevention of Tuberculosis recognizes three stages in the clinical course of the disease. According to this classification 139 cases of the present series were grouped as incipient, and eighty-seven as moderately advanced. Tubercle bacilli were demonstrated in 21.58 per cent. of the early cases and in 47.12 per cent. of the moderately advanced. The physical examination showed definite evidence of incipient disease in 131 instances, or 94.24 per cent., and negative findings in eight instances, or 5.76 per cent.

Table 1 indicates that the site of the initial lesion was in the upper half of the chest in over 80 per cent. of the cases, and in the lower half of the chest in 8 per cent.; in the remaining 12 per cent., both apex and base were involved.

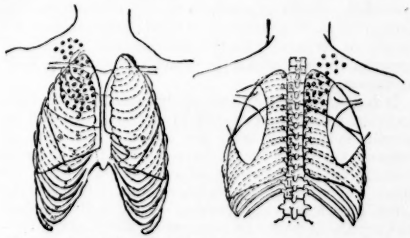

Fig. 3.—(Case 3231).—Tubercle bacilli present; indicates the latent râle zone in moderately advanced disease. In this group the latent râle alone is heard in approximately 30 per cent. of the cases. The roentgenogram presents a shadow more extensive than that of the râle zone.

Table 2 illustrates the occurrence of râles in 139 instances of incipient disease. Of this number, 131 showed demonstrable evidence of disease on physical examination. The râle incidence of the total number of cases was 82.73 per cent. If the eight sign-free cases be excluded from the table, the percentage of râle positive cases would be materially increased, that is, from approximately 82 to 88 per cent.

* From the New York State Hospital for Incipient Pulmonary Tuberculosis.
* Read before the Ontario Medical Association, Peterborough, Ontario, Canada, May 27, 1915.

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9. Whitney, quoted by Otis (Footnote 8).
10. Bandelier-Roepke: Die Klinik der Tuberculose, Ed. 1, Wurzburg, Curt Kabitzsch, 1914, p. 70.
11. Ogden, W. E.: Factors Frequently Overlooked in the Early Diagnosis of Pulmonary Tuberculosis, Canadian Med. Assn. Jour., 1912, ii, 200.
12. Bonney, S. G.: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders, 1908, Ed. 1, p. 220.
13. Garvin, A. H.: Auscultation of Cough, New York State Jour. Med., 1911, xi, 475.
14. Trudeau, E. L.: Personal communication.

Dry râles were noted in 101 instances, or 87.82 per cent.; in fourteen, or 12.18 per cent., the râles were moist.

TABLE 1.—SITE OF THE DISEASE IN 131 CASES OF INCIPIENT TUBURCULOSIS WITH POSITIVE SIGNS

Location of Lesion	Incidence	Per Cent.
Right apex	39	29.77
Left apex	27	20.64
Right and left apices	41	31.29
Right base	6	4.58
Left base	5	3.81
Right apex and right base	5	3.81
Right apex and left base	4	3.05
Left apex and left base	3	2.29
Left apex and right base	1	0.76
Totals	131	100.00

In the 115 râle-positive cases, the predominant type of râle was the fine dry râle; the coarse, sibilant and sonorous râles were the least frequently encountered.

If the cases are classified on the basis of the presence of râles before and after cough, in only twenty-seven instances, or 23.47 per cent., râles were demonstrated without the aid of cough, while in eighty-eight instances, or 76.53 per cent., the râles were latent, being demonstrable only by the aid of cough.

TABLE 2.—INCIDENCE OF RÂLES IN 139 CASES OF INCIPIENT TUBERCULOSIS

	Positive	Negative	Totals
Physical examination	131	8	139
Incidence of râles	115	24	139
Percentage incidence	82.73	17.27	100

TABLE 3.—CHARACTER OF THE RÂLES IN 115 INCIPIENT CASES

Character of râle	Incidence	Per Cent.
Fine râles	78	67.84
Fine and medium	14	12.19
Medium	18	15.65
Medium and coarse	2	1.73
Fine and sibilant	2	1.73
Medium and sonorous	1	.86
Totals	115	100.00

In determining the incidence of râles before and after cough, great care was exercised to include in the class showing râles before cough all those in which there was the *faintest* suspicion of their presence. Attention was particularly directed during the examination to the character of the breathing, and it was unconditionally demanded that the respiratory excursion in every instance should be deep and sharp before concluding that râles were absent, and that cough was necessary to establish their presence. Under these exacting conditions more than 75 per cent. of the cases studied showed the presence of râles only after cough.

TABLE 4.—INCIDENCE OF RÂLES BEFORE AND AFTER COUGH IN 115 CASES OF INCIPIENT TUBERCULOSIS EXHIBITING RÂLES

Râles	Incidence	Per Cent.
Without the aid of cough	27	23.47
Only after cough	88	76.53
	115	100.00

TABLE 5.—INCIDENCE OF RÂLES BEFORE AND AFTER COUGH IN EIGHTY-SEVEN CASES OF MODERATELY ADVANCED TUBERCULOSIS EXHIBITING RÂLES

Râles	Number of Cases	Per Cent.
Without aid of cough	63	72.50
Only after cough	24	27.50
Totals	87	100.00

The value of cough in demonstrating the latent râle is probably best illustrated in cases presenting a well defined lesion. This is strikingly exemplified in the series given in Table 5, comprising eighty-seven moderately advanced cases.

Notwithstanding the gross pulmonary infiltration, 27.5 per cent. of these cases showed no evidence of râles prior to the use of cough.

An increase in the number and distribution of râles was invariably noted after cough in the great majority of the patients exhibiting this sign on deep breathing. In several instances, showers of râles were elicited after cough, whereas previous to the employment of this procedure only a few indefinite clicks could be heard.

From the tables the following essential facts may be deduced:

1. In tuberculosis, the site of election is the apex.
2. Râles occur with great frequency.
3. The predominant râle of incipient disease is the fine dry râle, the sibilant, sonorous and coarse râle occurring relatively seldom.

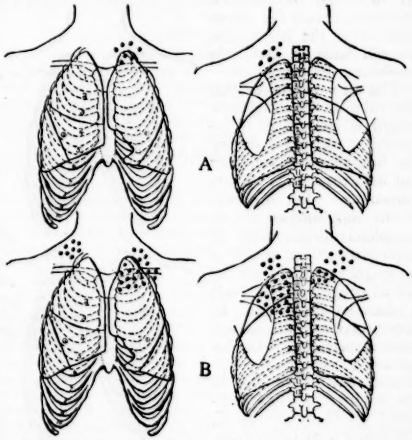

Fig. 4.—(Case 3516).—Tubercle bacilli present: *A*, before cough; *B*, after cough; illustrates the difference in the number and distribution of râles before and after cough in moderately advanced disease.

4. The latent râle is the initial râle of incipient tuberculosis in the great majority of cases.

The procedure to elicit the latent râle consequently is of great value in an examination to determine the existence of an early tuberculous implantation.

THE TECHNIC OF THE PROCEDURE

It will be unnecessary at this time to discuss the technic of auscultation, the differentiation of the sounds heard, etc., since they are treated of in the excellent textbooks on tuberculosis now available.

The patient can be directed to cough at any point in the respiratory cycle, and he can also materially modify at will the intensity, pitch, quality and duration of the cough. The interpolation of the cough at any given point in the respiratory cycle is illustrated in Figure 1, in which the upstrokes represent inspiration and the downstrokes expiration.

The zenith of the inspiratory phase is indicated at *A*, and represents the point at which the ordinary reflex

cough occurs. The cough at this point in the respiratory cycle is loud and explosive in character, tending to obscure the presence of adventitious signs, and should be avoided in diagnosis. Although latent râles may be elicited in certain cases irrespective of the position of the cough in the respiratory cycle, still in cases presenting only a few localized latent râles, these may be best elicited if the cough is inserted at a point in the expiratory phase corresponding to *B*. The supplemental air by this method is greatly depleted after coughing, and a physiologic reaction, that of inspiration, deep and full in character, is immediately initiated. This is a desirable feature since a delayed or shallow inspiration after cough may fail in some instances to elicit râles. Toward the end of expiration, the mechanism governing cough is also embarrassed, so that the resulting cough is reduced in intensity and hacking in character, excellent qualities for the successful demonstration of râles. The insertion of the cough at this point in the respiratory cycle, the point of increased intrathoracic pressure, favors the development of the latent râle, as will later be shown in explaining its origin.

The view expressed that the value of the diagnostic cough is decreased, if inserted at any point during the inspiratory phase, does not hold true under all circumstances. For instance, if the supplemental air be completely depleted by an expiratory effort, cough is no longer possible, since the act of coughing is in itself a phase of expiration. In order to cough, the patient must inspire, and if the inspiration corresponds approximately to a point in the respiratory cycle indicated on the chart at *C*, the cough is of equal value diagnostically, as if inserted at *B*, that is, toward the end of expiration. In the two instances the conditions under which the cough is produced are similar to one another in all essential respects. In certain patients who cannot be taught to deplete the supplemental air sufficiently, the succession cough may be used with advantage. It consists of a number of short hacking coughs without an intervening inspiration, indicated on the chart by *X 1, X 2, X 3, X 4*. This type of cough is the most satisfactory in depleting the supplemental air, and in some instances may be alone capable of eliciting the latent râle.

The prevailing opinion that râles are heard only during the forced inspiration following the cough is not entirely correct, since râles are also heard, in some instances, during the cough and the expiratory phase following it, as indicated by the dotted line on the chart. The general lack of recognition of this fact may be ascribed to the present practice of directing the patient to inspire immediately after coughing. The expiratory phase following the cough by this method becomes so shortened as not to be appreciable, and the râles produced during expiration are erroneously interpreted as originating during inspiration. The determination of this point can be readily established in some instances, if the period after cough and before the succeeding inspiration is prolonged and carefully auscultated for râles.

The mechanism involved in the production of the latent râle has not been satisfactorily explained in all details. The separation of the collapsed walls of the alveoli and smaller bronchioles of the atelectatic areas present in a tuberculous focus is generally conceded to be the source of the latent râle. If the foregoing explanation be accepted, the perplexing question arises as to the possibility of such a separation taking place during the expiratory phase, when, as has been shown, râles do occur. Without wishing to assert that the following explanation is the best, I conceive that the mechanism underlying the production of the latent râle is as follows: toward the end of expiration, the glottis is voluntarily closed, and the intrapulmonary pressure, by powerful contraction of the expiratory muscles, is increased. This sudden increase in the intrapulmonary pressure separates the collapsed walls of the bronchioles and alveoli in the atelectatic area. Once the patency of these structures is established, the râle is produced by means of the cough, which sets into vibration the pathologic secretions contained within the bronchioles and alveoli. The râles may be heard as previously mentioned, only during the inspiratory phase, or may be heard in some instances during the cough or the expiratory phase immediately following it.

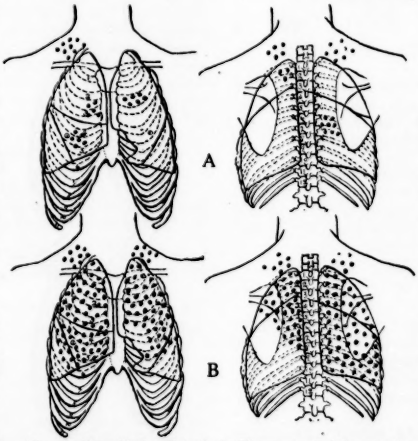

Fig. 5.—(Case 3114).—Tubercle bacilli present: *A*, before cough; *B*, after cough; illustrates the definite increase in the râle area that may occur after cough in advanced disease.

The procedure cannot be successfully employed in the presence of any condition that prevents an increase in the intrapulmonary pressure, since, as previously mentioned, this is an indispensable requisite in the production of the latent râle. Among such conditions are those affections of the larynx which interfere with the normal coaptation of the vocal cords, ulceration, tumor formation, muscle paresis, etc. In some instances in which the gap between the cords is marked, the result of ulcerative processes, no additional information is gained by practicing the procedure. Fortunately, in such cases the diagnosis is rarely in doubt. The procedure should be used with caution in recent hemoptysis. Thoracic or abdominal conditions in which pain is aggravated by cough interfere with the method (involvement of the bones or articulations of the thorax, acute pleurisy, intercostal neuralgia and acute inflammatory conditions of the abdomen). Tumors of the mediastinum which encroach on the lumen of the trachea or main bronchi, or marked dyspnea from any cause, are conditions fre-

quently not associated with pain but which may definitely interfere with the technic of the procedure.

The salient facts regarding the latent râle may be briefly stated as follows: The probable seat of the latent râle is in the atelectatic area of the tuberculous focus. A theory of the mechanism underlying its production has been offered, the essential part of which lies in an increase of intrapulmonic pressure, whereby the collapsed walls of the bronchioles and alveoli are separated. The optimal point of selection in the respiratory cycle for the diagnostic cough has been indicated, and reasons advanced in support of this selection. The statistics presented indicate that a knowledge of the procedure is of importance to the clinician in the diagnosis of incipient pulmonary tuberculosis.

CONCLUSIONS

1. The râle is a very constant sign in incipient pulmonary tuberculosis.

2. Among the early physical signs, the râle is the one definite sign. The others merely represent deviations from the normal, and at most are indefinite.

3. The râles are latent in approximately 75 per cent. of early cases, and 30 per cent. of the moderately advanced.

4. Localized apical râles are almost pathognomonic, other conditions that produce them being of rare occurrence.

5. The technic of the procedure necessary to elicit the latent râle is not difficult, and can be acquired after a few trials.

THE PROGNOSTIC VALUE OF THE UROCHROMOGEN REACTION IN PULMONARY TUBERCULOSIS

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Having had our interest thoroughly aroused by Dr. Schäffle's paper[1] on the comparison between the urochromogen and diazo tests in tuberculosis, and realizing our opportunity of doing some work along the same line, we made these two tests a part of the routine examination of every specimen of urine sent into the laboratory at Cresson State Sanatorium.

During the eight months ending Oct. 15, 1915, we examined 1,805 specimens from 832 different patients, and the following detailed report is offered in the hope that it may be of interest to others.

The simplicity of the urochromogen test and its evident superiority over the diazo should recommend it to all who have charge of tuberculous patients. We have followed closely the technic of Weiss as quoted in Dr. Schäffle's paper: A small amount of fresh, limpid urine, diluted with water to three times its volume is divided into equal portions in two test tubes, to one of which 3 drops of a 1:1,000 solution of potassium permanganate are added. The other tube is used as a control.

Turbidity and the color of the urine appeared to have no effect on the reaction. We have regarded as positive only those in which a distinct canary yellow was produced and was found to be fairly permanent, remaining for from twenty-four to forty-eight hours in specimens kept under ordinary conditions of light and temperature for that particular purpose. Occasionally there occurs a faint yellow tinge which soon disappears and may be disregarded.

Of the 832 cases in this series, 424 were male and 408 female. Classified according to physical condition, 326 were far advanced, 399 moderately advanced and 107 incipient. The results are best shown by the accompanying table.

RESULTS OF THE TESTS

Positive to both tests	2
Negative to both tests	741
Positive urochromogen with negative diazo	89
	832

Of the ninety-one patients with positive urochromogen reactions, forty-five were male and forty-six female; eighty-six were adults and five children, and seventy-eight far advanced and thirteen moderately advanced. For convenience I have grouped these cases according to different conditions as follows:

GROUP A

This consists of forty-five patients, forty far advanced and five moderately advanced, who had a positive reaction on their admission to the sanatorium. Of these, twenty far advanced, eight male and twelve female, died in from one week to three months. In one female patient, moderately advanced, the reaction became negative ten days after admission, but she died within a month from complicating heart disease and ascites.

Twelve patients, seven male and five female, all far advanced, declined steadily and returned home. The reaction was still positive on discharge; all were very toxic, having considerable fever and losing weight.

One female patient, moderately advanced, went home after four months, the condition being much improved. The reaction was negative. She gained 14 pounds, and the temperature was from 99 to 100 on discharge.

Seven female patients, four far advanced and three moderately advanced, are still in the sanatorium, all negative, all gaining weight, two having normal temperature, and the others not above 100. One of them lost 6½ pounds in less than a month, all the while having an evening temperature of from 101 to 103 with a new area of cavity formation, a point which I wish to emphasize. After two months the temperature was seldom above 99, the urochromogen reaction was negative, and the patient had regained 5 pounds of the lost weight.

Three patients, one male and two female, all far advanced, are still at the sanatorium, failing rapidly, losing weight, and having evening temperatures of from 100 to 103 and continued positive urochromogen reactions.

One male patient, far advanced, left the sanatorium within a month and failed to send in a specimen for examination on discharge.

GROUP B

This consists of fifteen patients, six male and nine female, who had negative reactions on admission but became positive within two months. Fourteen were far advanced and one moderately advanced.

Three of these, one male and two female, developed new cavity formation with rapid loss of weight and high fever, and died in less than two months after the first positive urochromogen reaction.

Nine patients, four male and five female, failed steadily and went home. They all showed loss of weight, beginning within a short period of time before the appearance of the positive reaction. In six of these there was a marked increase in the evening temperature even when it had been moderately high before, and in four cases there was a very marked increase in the number of tubercle bacilli in the sputum, the Gaffky scale being used for the purpose of comparison.

1. Schäffle, Karl: A Comparison Between the Urochromogen and Diazo Tests in the Prognosis of Tuberculosis, THE JOURNAL A. M. A., Oct. 10, 1914, p. 1294.

Two female patients, far advanced, gave evidence of new cavity formation shortly after the appearance of the positive reaction, with loss of weight and increased fever. Both are now negative, having gained weight and have only slight fever.

The moderately advanced patient also had a negative sputum on admission, but with the positive urochromogen reaction had a positive sputum and a loss of 1½ pounds in weight. Within a month he began to gain weight again, and sputum and urine have remained negative.

GROUP C

This consists of sixteen patients, thirteen male and three female, old residents of the sanatorium who had positive reactions the first time their specimens were sent to the laboratory after these tests were begun. The examinations are made once in two months unless positive for albumin, in which case the urine is examined every two weeks or oftener, according to the condition of the patient. Thirteen of these cases were far advanced, and three moderately advanced.

Six male patients, far advanced, died within from one week to three months. One moderately advanced male patient became despondent over his condition and committed suicide.

Two far advanced male patients and one moderately advanced female went home within two months after their first positive reaction. All had made slight gains in weight, and the general condition was somewhat improved. The reaction was negative on discharge.

One male and two female patients, all far advanced, went home, steadily declining and with reaction positive on discharge. The deaths of the two female patients have been reported.

Three male patients, two far advanced and one moderately advanced, are still in the sanatorium, failing rapidly, and have positive urochromogen reactions.

GROUP D

This consists of fifteen patients, nine male and six female, old residents of the sanatorium who were negative at the first time their specimens were examined but became positive at some time later. Eleven were far advanced, and four moderately advanced.

Six far advanced, three male and three female, died, one in six months and the others in less than three months after the first positive reaction.

One male patient, moderately advanced, developed tuberculous meningitis. The positive reaction appeared three days before his death.

Three male patients, two far advanced and one moderately advanced, are still in the sanatorium, all on the decline and having positive reactions.

One male and one female patient, both far advanced, went home failing, losing weight and having high irregular temperature. Both had positive reactions on discharge and both are reported dead.

One female patient, far advanced, is still in the sanatorium, negative, has gained several pounds in weight, and is having only moderate fever.

Two moderately advanced patients, one male and one female, went home. The male patient had a negative reaction, but a suspicious area of softening in the left upper lobe, and was losing weight steadily. His only positive reaction was eleven days previous to the negative discharge specimen. The female patient had been in the sanatorium six months and had gained 25 pounds. Ten days before her departure she began to have a higher temperature but did not lose weight. Her discharge specimen was positive.

Two of the cases in this group were especially interesting. The first, an adult female patient, far advanced, had a severe hemorrhage in February which was followed by the expectoration of small amounts of fresh blood every day for two weeks. The urine was examined repeatedly during the next month, but was always negative, and hence the examinations were discontinued. The patient lost weight steadily, and had a continued moderately high evening temperature. A strongly positive reaction was present at the middle of May, two months after the last negative reaction, and the patient died suddenly, one week later.

The second was a girl, aged 12, far advanced, with cavity formation in both upper lobes and a marked cervical adenitis. The temperature was normal, the sputum positive and the urochromogen reaction negative in February. The patient was able to be up and about with the other children until the middle of April, when she became acutely ill. The temperature was from 101 to 102; there was rapid loss of weight with extension of lung involvement, the sputum was negative, the urochromogen reaction positive, and the enlarged cervical glands rapidly diminished in size. It did not seem possible that she could live more than a few days. Two weeks later, however, she was considerably improved, but still unable to be weighed. The temperature was lower, the glands enlarging again, and the sputum and urochromogen reaction negative.

June 10, after the patient had gained several pounds, it was noticed that she was once more losing weight and having an evening temperature of from 101 to 103. Examination revealed extended cavity formation with sputum and the urochromogen reaction positive. From then on she failed steadily and died in September, five months after the first positive reaction.

OTHER CASES

During the eight months there were twenty-six other deaths than those previously mentioned, and I have looked over their charts in order to find in what respects they differed from those who had positive reactions. All were far advanced.

Two, who had been gaining slowly since their admission, and whose examinations had been negative, had sudden, large hemorrhages and died within a few minutes.

One developed a pneumothorax a month after admission and died two weeks later. There was a negative reaction one week before death.

Two, who had only slight activity, though far advanced, died of nephritis. Both were negative on several examinations, the last being within twenty-four hours of the deaths.

One patient died fifteen days after a severe hemorrhage. The urine was not examined.

One died eighteen days after admission. The reaction was negative when the patient was admitted, and the patient was not reexamined.

Two died from heart disease. These patients had repeated negative reactions till within three or four days before death.

One died four months after having a severe hemorrhage. This patient had two negative examinations, the last one five days before death.

Two were negative five weeks before death and were not reexamined.

Fourteen had not had these tests at all, owing to the fact that their specimens had not become due at the laboratory according to our schedule, and we were not then familiar with the conditions which we now consider as indicating a special examination, namely, loss of weight and increased activity. At present we examine all positive and even suspected cases at least once a week.

COMMENT

Our failure to find more positive diazo reactions was due, I think, to an error in our method of doing the test, an error which has been corrected in our later work but which unfortunately has rendered the present series of cases unavailable for accurate comparison. The method which we used at first was to add "a few drops" of the sodium nitrite solution to the mixed urine and sulphanilic hydrochloric solution, and that indefinite "few drops" was the cause of our downfall. On looking into the matter a little more closely I found in different books four different methods of perform-

ing the test, and the four varied in the amount of sodium nitrite solution used as well as the amount and manner of adding the ammonia. I give here the method which we found to give the best results and which we are now using in all cases:

Solution 1:

Sulphanic acid	1 gm.
Strong hydrochloric acid	50 c.c.
Water	1,000 c.c.

Solution 2:

Sodium nitrite	1 gm.
Water	200 c.c.

These solutions are kept separate in tightly stoppered, dark colored bottles. For use, 5 c.c. urine and 5 c.c. Solution 1 are mixed in a test tube, 2 drops of Solution 2 added, and the mixture shaken until frothy. Then with a pipet having a rubber bulb, 1 c.c. ammonia is quickly added. The result, if positive, is a cherry red color in the body of the tube, while the foam assumes a lighter shade but is still reddish.

We do not mix Solutions 1 and 2 in a stock bottle on account of its rapid deterioration. We have found that one drop of Solution 2 in a known positive urine occasionally does produce the characteristic color, that 2 drops never failed, but 3 drops sometimes and 4 drops always spoiled the reaction. Similarly we found that adding the ammonia drop by drop till the mixture was alkaline did not produce the desired result. The ammonia must be in excess and added quickly. According to Wood's "Chemical Diagnosis," the administration of opium derivatives will inhibit the diazo reaction, and this has to be taken into consideration, for many of our patients with positive urochromogen have required such medication.

The administration of such drugs, however, does not appear to have any effect on the urochromogen reaction. Neither does it seem to be influenced by the diet of the patient. Filtering the urine makes no difference, nor does boiling. The latter fact led us to try the biuret test for peptone, with negative results.

Specimens from the same patient at different times of the day showed no variation in the reaction. At one time some quite marked differences in the intensity of the reaction led to an investigation of our permanganate solution which was found to have deteriorated and become unfit for use. Since then we have kept it in a dark colored bottle, made new solution once a month, and have had no more doubtful reactions.

None of the positive specimens were alkaline when examined. When rendered so by the addition of normal sodium hydroxid solution there was no apparent difference until the sodium hydroxid had been added to excess. Then the characteristic yellow failed to develop on addition of the permanganate solution, but was replaced by a dark blue which quickly disappeared.

Along with the positive urochromogen we have found a very excessive indican reaction.

From the physical findings in these reported cases my conclusions are that the positive reaction in patients with pulmonary tuberculosis is present only when there is an actual destructive process going on. Occurring in an ambulant case we would regard it as a warning that the patient should be put at absolute rest in bed. In the moderately advanced case, we may expect soon to find evidence of cavity formation if the reaction remains positive. For the already far advanced case with cavity riddled lungs it is of grave significance. In 93 per cent. of our cases of this type the patients died within four months, and the majority of these within three months.

On the other hand, a continued negative reaction in a urine that previously has been positive appears to indicate at least a temporary cessation or retardation of activity.

A STUDY OF THE ETIOLOGY OF CHRONIC NEPHRITIS

AND OF THE EFFICIENCY OF THE PHENOLSULPHONEPHTHALEIN TEST *

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We have been much impressed with the frequency of chronic kidney conditions in patients admitted to the hospital for other ailments, and with the varying etiologic factors which their histories suggest as possible causes for the condition.

A systematic study of all such cases for two years past has thrown some light on the questions of etiology and classification, and has led us to some conclusions as regards tests of kidney efficiency and methods of treatment. We shall present the facts as we find them, and summarize our own conclusions. Further and different deductions may suggest themselves to others, but it must not be forgotten that medicine is not a mathematically accurate science, and a statistical study cannot always give full account of the reasons for classification in many cases. Doubtful cases have been thrown out, or accounted for in a separate group so as not to disturb our main point unnecessarily.

There were upward of 7,000 admissions to the hospital in the two years of our observation, practically all males between 20 and 60 years of age.

Among them the initial urine examinations showed that 594 patients had albumin and casts, although only thirty-eight of them were admitted as cases of nephritis—thirty-four with the diagnosis of chronic interstitial, and four with the diagnosis of acute nephritis.

It seemed wise to adopt at once certain arbitrary lines and to classify the cases accordingly. We therefore divided these 594 cases into two groups: those in whom the blood pressure, in absence of any other obvious cause, was above the maximum normal while at rest in bed on ordinary hospital diet, and those in whom it was normal or below.

Each group was studied in reference to entrance diagnosis, complications, age, occupation, use of alcohol, and previous infections, subdivided into: (1) venereal; (2) ordinary diseases of childhood, including mumps, measles, whooping cough and chickenpox; (3) scarlet fever, diphtheria, pneumonia, rheumatism and tonsillitis, which were grouped together as the more serious infections, and (4) a separate group comprising all others, typhoid, malaria, etc., which are referred to as other infections.

The cases with a blood pressure above 180 were separated out from the cases with high blood pressure. It was not possible to distinguish in all high blood pressure cases between chronic interstitial nephritis and arteriosclerotic kidney, but for the main purposes of this paper such a distinction is not necessary, and

* From the records of the Southern Pacific Hospital.

they will all be referred to as chronic interstitial nephritis.

Table 1 shows the cases according to this classification, the first group being those with blood pressure above normal, and the second those in which it was normal or below normal. It is obvious at once that the diagnosis of nephritis is practically always a laboratory diagnosis, that it exists as a complication undiscovered until some other condition brings the patient to the hospital. We are not arguing that it was not the primary condition or was not the cause of the respiratory or cardiovascular break that brought some of the patients to the hospital; but it certainly was not the appreciated condition that governed the patient's action in reporting to the company's physician, nor was it the tentative or admission diagnosis suspected in a large proportion of the cases in which it existed.

The second very important thing is that the etiologic significance of infections, hard work and alcohol bears a very similar relation both to the group in which albumin and casts were accompanied by low blood pressure, and to the group in which they were accompanied by high blood pressure. The chief difference in the two groups lies in the fact that in the high blood pressure cases three fourths were over 40 years of age, whereas in the normal or low blood pressure group less than one third were above the age of 40. In other words, the incidence of marked permanent structural change in the kidney bears a very distinct relation to age. This is further shown by the fact that in the control group the age on entrance was under 40 in 68 per cent. of the cases, in the group showing kidney disturbance with normal pressure 66 per cent. were under 40, while in the high pressure nephritics only 24 per cent. were under 40. Whether or not the normal pressure cases are on their way to early permanent change, we cannot say; but the fact that both groups show that venereal disease and infection from the scarlet fever group were nearly two times more frequent than in normal kidney cases makes the supposition reasonable that the signs of kidney irritation in the low pressure group portend a likelihood of future kidney insult and change not evidenced by the control group.

The significance of previous infections in relation to kidney disease and kidney susceptibility can be established only by an investigation into the frequency of such infections in a similar number of cases admitted to the hospital showing no signs of kidney disturbance. If the incidence of alcohol, venereal infections and other serious infections proves to be equally frequent and important in cases showing no signs of kidney disturbance on entrance, it is obvious that we must look further in the study of causes of kidney disease. A tabulation of 594 cases was made to show this point (Tables 2 and 3).

Table 2 shows the etiologic factors in 336 cases of high blood pressure, albumin and casts in the urine, and 336 cases with normal blood pressure, and no sign of kidney lesions. Table 3 shows the etiologic factors in 258 cases with normal blood pressure, albumin and casts in the urine, and 258 cases with normal blood pressure, and no sign of kidney lesions. The kidney disturbance and nephritic cases are arranged in parallel columns with the normal controls.

It will be seen at once that certain of the infectious diseases, notably the venereal and scarlet fever groups, were from 20 to 300 per cent. commoner in the early history of chronic nephritic cases than in the non-nephritic cases. The influence of alcohol is somewhat less than might be supposed; while it was commoner as a possible etiologic factor than any other condition among the nephritics, it was also the commonest factor in the control group. The fact is evident, however, that in the nephritic and non-nephritic kidney conditions, alcohol was used in from 16 to 25 per cent. more cases than in the control group. It is even important

TABLE 1.—CLASSIFICATION OF CASES

Cases	Blood Pressure Above Normal											Blood Pressure Normal or Below Normal	
			Age		Occupation					Blood Pressure			
	Nonnephritic Control Cases	Total Nephritic Cases	Under 40	Over 40	Engineers	Trainmen	Laborers	Mechanics	Sedentary	140 to 179	180 plus	Nonnephritic Control Cases	Total Nephritic Cases
Surgical:													
Infected wounds	28	14	4	10	..	4	3	7	..	14	..	26	17
Noninfected wounds	37	23	6	17	1	1	9	7	4	19	4	33	8
Fractures	26	18	6	12	2	..	8	6	2	15	3	12	16
Appendix	19	12	6	6	..	1	7	2	2	10	2	17	12
Gastro-intestinal	16	22	3	19	1	6	5	4	5	19	3	14	6
Gallbladder	2	5	2	3	..	..	2	1	2	5	..	2	5
Alveolar abscess	0	4	3	1	..	1	2	..	1	4	..	..	10
Medical:													
Acute infections	61	28	12	16	3	2	8	8	7	24	4	45	71
Cardiovascular	9	45	5	40	7	2	10	6	18	26	19	4	12
Respiratory	41	26	3	23	1	5	8	4	8	19	7	33	33
Gastro-intestinal	16	21	6	15	..	3	13	2	3	15	6	9	14
Nervous and mental	13	21	4	17	1	3	10	5	1	14	7	8	10
Genito-urinary	32	17	2	15	3	1	7	5	1	16	1	27	10
Nephritis	0	34	9	25	3	4	7	8	12	15	18	..	4
Other conditions	36	46	11	35	7	2	29	9	7	36	8	28	30
Unrecorded	..	..	..	..	..	..	..	..	..	3*	..	..	..
Blood pressure above normal:													
Totals	..	336	82	254	29	35	128	74	73	254	82	..	..
Normal controls	336	..	226	110	23	41	128	65	79	..	..	..	..
Blood pressure below normal:													
Totals	..	..	173	82	13	34	95	68	54	..	..	..	258
Normal controls	..	..	179	79	20	29	95	49	65	..	..	258	..

* Below normal.

that of the cases giving no history whatever of any etiologic factor, there were twenty-nine from nephritics and sixty-eight from the controls; thirty-eight from the non-nephritic kidney condition in comparison with forty-five from the control group.

A previous history of some diseases other than the minor children's ailments was about twice as common in the nephritics. A comparison of the cases showing kidney signs without high blood pressure with an equal number of cases with no sign of kidney disturbance gave the results shown in Table 3.

We have presumed its relation to kidney disease manifesting itself late in life even where no history of its direct consequence to the scarlet fever was shown or known. From the results given in Table 3 it certainly seems reasonable to suppose that the kidney, once the seat of trouble manifested by the presence of albumin, casts, red blood cells, etc., in the urine, is likely to be the seat of trouble again under conditions to which the normal kidney is more resistant.

In following the urine sediments of cases in which streptococcus infection was known to exist, especially

TABLE 2.—ETIOLOGIC FACTORS IN 336 CASES OF HIGH BLOOD PRESSURE, ALBUMIN AND CASTS, AND 336 CASES WITH NORMAL PRESSURE AND NO KIDNEY LESIONS

Possible Etiologic factors	Venereal		Alcohol		Scarlet Fever Group		Usual Diseases of Childhood		Other Infections		No History of Any Disease	
	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal
Alone	9	5	28	35	5	9	17	46	11	11	19	68
With usual diseases of childhood	7	4	25	28	4	13	..	..	..	..	..	..
With alcohol	4	6	..	..	4	..	..	..	..	..	..	..
With other infections	2	1	..	6	5	1	16	23	..	..	..	..
With scarlet fever group	2	2	..	2	..	..	..	..	..	..	..	..
With alcohol and usual diseases	22	13	..	..	11	..	..	..	..	..	..	..
With usual diseases and other infections	8	6	39	19	14	6	..	..	..	..	..	..
With usual diseases and scarlet fever group	2	2	15	9	..	..	..	..	..	..	..	..
With alcohol and other infections	10	6	..	..	..	..	..	..	..	..	..	..
With scarlet fever group and alcohol	25	8	..	1	..	..	..	..	..	..	..	..
With scarlet fever group and other infections	2	2	..	3	..	1	30	..	..	..	..	..
	93	55	107	103	43	30	63	69	11	11	19	68
Scarlet fever group and all other conditions	89	50	..	..	..	..	..	..	..	..	..	..
Alcohol and all other conditions	168	136	..	..	..	..	..	..	..	..	..	..

TABLE 3.—ETIOLOGIC FACTORS IN 258 CASES WITH NORMAL BLOOD PRESSURE, ALBUMIN AND CASTS, AND 258 CASES WITH NORMAL PRESSURE AND NO KIDNEY LESIONS

Possible Etiologic Factors	Venereal		Alcohol		Scarlet Fever Group		Usual Diseases of Childhood		Other Infections		No History of Any Disease	
	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal	Nephritic	Normal
Alone	7	3	16	24	8	8	31	37	6	9	38	45
With usual diseases of childhood	14	3	19	22	4	12	..	..	..	..	..	..
With alcohol	6	4	..	..	..	..	..	..	..	..	..	..
With other infections	2	1	8	3	..	1	14	22	..	..	..	..
With scarlet fever group	2	1	2	..	..	..	..	..	..	..	..	..
With alcohol and usual diseases	24	9	..	..	..	..	..	..	..	..	..	..
With usual diseases and other infections	6	6	..	18	4	5	..	..	..	..	..	..
With usual diseases and scarlet fever group	4	1	..	5	..	..	..	..	..	..	..	..
With alcohol and other infections	8	6	..	..	..	..	..	..	..	..	..	..
With scarlet fever group and alcohol	12	9	..	..	..	..	..	..	..	..	..	..
With scarlet fever group and other infections	1	..	22	3	..	1	..	..	..	..	..	..
	86	43	67	75	16	27	45	59	6	9	38	45
Scarlet fever group and all other conditions	59	46	..	..	..	..	..	..	..	..	..	..
Alcohol and all other conditions	117	103	..	..	..	..	..	..	..	..	..	..

As indicated earlier, the frequency of venereal disease was eighty-six in the group of 258 with kidney disturbance, whereas only forty-five among the controls had had venereal disease. Venereal infections among the scarlet fever group were 20 per cent. larger than among the controls, and the alcoholics were 15 per cent. more numerous.

It seems fair to conclude that a case is made out for the definite bearing of venereal infections and the more serious infections (chiefly streptococcus and pneumococcus) as well as of alcohol on the occurrence of advanced kidney disease.

We have all understood the relation of scarlet fever to immediately consequent and uncured kidney disease. in the throat, we have been surprised to find streptococci in the urine with very little evidence of kidney disturbance often enough to warrant us in believing that the beginning of many serious kidney disturbances are insidious, and patients are discharged cured of their primary trouble and yet harboring conditions in the urine which must inevitably lead to permanent kidney diseases. One such case in a doctor following acute streptococcus tonsillitis was accompanied by changes so slight as to have been easily overlooked had we not had this very problem under investigation, and yet three months' careful treatment by rest, milk diet and hexamethylenamin intermittently was necessary before the organisms finally disappeared.

In considering the influence of occupation it was ascertained that the 40,000 employees of the company were grossly divided as indicated in Table 4.

Here one finds a remarkable evenness in the figures, and nothing is shown quite so conclusively as that the 16 per cent. of sedentary employees suffer more than all the others both in regard to kidney disease and to all the other conditions requiring medical attention. Engineers and firemen were admitted with nephritis in nearly 25 per cent. greater frequency than in proportion both to the number employed and their admissions for other causes. Whether or not the lack of exercise of the clerks and the same cause combined possibly with exposure is the cause of this condition with engineers can only be surmised.

Exhaustive work has been done to measure renal function in bilateral and unilateral disease by various urinary examinations. Cryoscopy and electric conductivity have been studied but are not practicable. Sodium chlorid and urea estimations have been carried out, especially in unilateral kidney disease. The hydrogen ion concentration of the urine has also offered a field for study, and has been studied, among others, by Palmer and Henderson. The diastase test has also been used, and has been favorably reported on by Wohlgemuth, von Beuzer, Heruta, Wynhausen, Marino, Rosenthal and Geyelin.

TABLE 4.—INFLUENCE OF OCCUPATION

Occupation	Employees in Various Departments, Per Cent.	336 Admissions with Nephritis, Per Cent.	336 Non-nephritic Controls, Per Cent.
Engineers and firemen	6.8	8.8	6.8
Conductors and brakemen	10.	10.6	12.2
Laborers	40.4	36.	38.1
Mechanics	26.4	22.3	19.4
Sedentary (office force)	16.4	22.3	23.5

Lactose and potassium iodid have also been employed to determine renal function, but they do not appear satisfactory, and the same may be said of phlorizin, which produces a glucosuria when injected subcutaneously, the degree of which is the essential end-result.

Various substances have been subcutaneously, intramuscularly or intravenously injected to test for the rapidity of excretion and the amount based on colorimetric urinary estimations. Among these are methylene blue, rosanilin, indigocarmin and phenolsulphonephthalein. Methylene blue has been found painful, and is slowly eliminated. Rosanilin has had only a limited use, and does not appear satisfactory. Indigocarmin, in the hands of a few, notably Voelker and Joseph, Baetzner, Ehrick, Roth, Tanaka and Thomas, has given the most satisfactory results of all the kidney functionation tests. Phenolsulphonephthalein has been most exhaustively studied clinically and experimentally, and the majority of the investigators have reported most favorably as to its value. Many have made comparative studies of two or more of the abovementioned substances. Phenolsulphonephthalein was introduced for renal functionation determinations by Rowntree and Geraghty[1] in 1909. Among the more recent investigators of phenolsulphonephthalein are Rowntree, Marshall and Baetjer,[2] and Geraghty,[3] who emphasize its value in nephritis and other renal disorders. Thayer and Snowden[4] reported that the degree of its excretion coincided with necropsy findings. Hess[5] concluded that the phenolsulphonephthalein surpasses all other methods by its simplicity, and that it is of value prognostically as well as diagnostically. Pazzana,[6] who studied only a small number of cases, endorses this method. Fanz[7] has satisfactorily employed this test, and recommends that the standard color solution should be made up in part of the patient's urine obtained before inoculation of the phenolsulphonephthalein. Braasch and Thomas[8] consider that fundamental surgical principles and clinical data are most important, but that the excretion test aids in differential diagnosis. It has only a limited value prognostically. Smith[9] found the test to parallel with great constancy the pathologic condition of the kidneys. Intravenous administration was carried out in some cases. Siegel[10] has reported on its value diagnostically and prognostically in all types of nephritis and in surgical kidneys. Recently studies have been made, and their value emphasized, on the blood nitrogen retention in renal disorders. Frothingham[11] believes that the blood pressure estimation, repeated routine urinary examinations and the excretion of sodium chlorid are the most reliable diagnostic methods. For diagnosis, the most useful examinations are for nonprotein nitrogen in the blood, to determine the ability of the kidneys to excrete extra nitrogen in the urine and phenolsulphonephthalein.

Hohlweg[12] has favorably reported on the examination of blood for residual nitrogen. Quinby and Fitz[13] have employed Prussian blue intravenously as well as indigocarmin and phenolsulphonephthalein. Urines were examined for total chlorids, nitrogen, diastase and hydrogen ionization. They used dogs with experimentally produced unilateral nephritis. They conclude that phenolsulphonephthalein and nitrogen excretion are the most useful tests. Austin and Eisenbrey,[14] studying experimental nephritis in dogs, found that the anatomic appearance of the kidneys bore no definite relation to nitrogen, chlorid, or phenolsulphonephthalein eliminations. They concluded that phenolsulphonephthalein elimination seemed to be a better indicator of kidney excretion than either the anatomic changes or the elimination of total nitrogen or chlorids.

PERSONAL OBSERVATIONS

Following the technic as described by Rowntree and Geraghty, sixty-seven patients were studied with the phenolsulphonephthalein test, and seventy-five injections were made. It is unfortunate that many of the patients received only one injection. General medicine and surgical conditions were represented, and most of the cases showed albuminuria. Of the sixty-seven patients, thirty-six (50 per cent.) were nephritics, one with acute parenchymatous nephritis, thirteen with chronic parenchymatous and twenty-two with

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14. Austin and Eisenbrey: Jour. Exper. Med., 1911, xiv, 366.

chronic interstitial nephritis. Of the non-nephritic group, the average excretion for two hours was 51.4 per cent. The lowest was 35 per cent. in a case of lumbosacral myalgia and no demonstrable signs of nephritis. Two cases of neurasthenia showed 35 per cent. The highest percentage was seventy-seven in a case of cholelithiasis. The case of acute parenchymatous nephritis was a resolving one with a systolic blood pressure of 152 mm. and a phenolsulphonephthalein output of 56 per cent.

In one case of chronic parenchymatous nephritis the Edebohl's operation was performed. The phenolsulphonephthalein output of 10 per cent. before the operation rose afterward, with marked clinical improvement, to 32 per cent. within two weeks and to 52 per cent. three months afterward. Within six weeks therefrom, owing apparently to indiscretion in diet and undue physical exercise, uremia developed. The youngest patient in this group was 18 years old and gave the lowest output, 14 per cent. Her condition was that of impending uremia. She left the hospital, and was unfortunately lost sight of. Except one, all of the remaining patients with parenchymatous nephritis were in fair physical condition, showed an average systolic blood pressure of 150 mm., and gave an average output of phenolsulphonephthalein of from 35 to 40 per cent. One case only showed an excretion (65 per cent.) that did not parallel the severe cardiorenal condition (systolic blood pressure, 80 mm.).

Of the cases of chronic interstitial nephritis, all but one showed a parallelism of phenolsulphonephthalein output and clinical symptoms. This patient, who had hepatic cirrhosis, a few days after admission excreted only 12 per cent. After two months he had somewhat improved, and the excretion was 35 per cent. The lowest percentage obtained in any case was 7.5. The patient died the following day of uremia.

ANALGESIA AND ANESTHESIA IN OBSTETRIC PRACTICE

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For two or three years the attention of obstetricians in this country has been rather sharply called to methods of relieving the pain of labor. Various means to this end have been presented and in turn sharply criticized. Successive reports of work along this line have begun to clarify our ideas. Early enthusiasm has been modified by a longer experience. We are, however, far from adopting uniformly any one procedure as best. Here, as in every field of medical therapeutics, no fixed plan can govern every case; but the patient will continue to expect, and should be given, discriminating judgment as to the needs of her individual case. No rule of procedure should guide us, but rather judgment of our patient's condition and temperament, together with accurate knowledge of the drugs we are employing, their indications, contraindications and therapeutic effects should form the basis of our procedure.

In the summer of 1914 I began giving this matter special attention. In November, 1914, we used nitrous oxid and oxygen for the first time as a labor analgesic at St. Luke's. Since that time we have developed our plan of procedure, as experience or theoretical considerations pointed the way.

Previous to using gas as an analgesic in labor we had for some time been employing it as the anesthetic of choice, in operative work in all eclampsia and all other toxemia cases, and for various minor operative obstetric procedures in which unconsciousness rather than relaxation was to be desired.

Since that date we have employed gas to relieve the pain of labor in seventy-two cases. In some of these, only gas was used. In many of them morphin was employed, in quite a few ether, and in a few scopolamin. But in all of the seventy-two cases, gas was the mainstay, and the other drugs were used as adjuvants, or to meet special indications.

In most of our cases the gas has been administered by the same anesthetist, Dr. Cornelia Stoeltzing, and to the gradually increasing knowledge of its use, based on this experience, is to be ascribed much of the satisfaction which we have had with the method. Ability to get results with gas analgesia depends to a considerable degree on the knowledge gained by experience. Any one desiring to employ nitrous oxid and oxygen in labor should first master the method himself and should so far as possible give his anesthetizer time to acquire technical skill.

In this article I wish to present no detailed account of cases, but to describe our present practice, with a brief statement of the reasons therefor, and the results obtained. I shall consider three agents, morphin, gas and ether, as the various modifications of their use cover the entire field of our present technic. Our use of these drugs is based on our belief in the accuracy of propositions which may be outlined thus:

PRINCIPAL THEORETICAL CONSIDERATIONS

MORPHIN:

1. Relieves pain.
2. Relaxes a rigid cervix.
3. Interferes with labor pains frequently if given too early.
4. Delays labor if given in cases of true primary uterine inertia.
5. Hastens labor if given in cases in which a hypersensitive os is delaying the first stage.
6. Depresses the child's respiratory center, for a period varying from two to four hours after administering to the mother.
7. By its sedative effect on the nervous system, diminishes the maternal exhaustion due to long continued first stage pains.
8. Is eliminated slowly.

NITROUS OXID AND OXYGEN:

1. Probably retards first stage pains.
2. Does not retard second stage pains.
3. Hastens the second stage of labor, by removing the inhibition of voluntary effort caused by pain.
4. Causes no cyanosis of the mother when properly administered.
5. Has no deleterious effect on the baby's respiratory centers.
6. Is eliminated very rapidly.
7. Does not cause muscular relaxation.
8. Does not relax the perineum and pelvic floor, and hence does not aid in the prevention of laceration of a rigid perineum as well as ether.
9. Exerts no known deleterious effect on the liver or kidneys.
10. May be used over a long period of time that is, four, five or six hours, with safety.

ETHER:

1. Causes relaxation of both voluntary and involuntary musculature.
2. Occupies an intermediate position between morphin and gas on the baby's respiratory apparatus.
3. Is not desirable as an analgesic over so long a period as gas.
4. Is more slowly eliminated than gas.
5. If used in any quantity produces nausea and some vomiting.
6. Irritates the mother's respiratory apparatus as well as her kidneys.
7. Produces less prompt analgesia than gas.

NORMAL CASES

In labors not distinctly abnormal, morphin is used during the first stage, and only when the labor is expected to last at least four hours longer. Nature makes a determined effort to stimulate the infant's heretofore unused medullary respiratory centers to vigorous action at the moment of birth. The normal stimulus of this center is the increase of carbon dioxid in the blood. This has been secured by the interference with the oxygen supply through the placenta, by means of the vigorous and prolonged uterine contractions of the terminal moments of the perineal stage. Attempts at respiration are also stimulated by the reflex effect of cold air striking the baby's skin. Both phases of Nature's plan for securing vigorous respiration at birth are interfered with if the baby's nervous system is under the influence of morphin at this particular time. So long as the child is in the uterus the effect of reasonable amounts of morphin is negligible because its oxygen supply at this time is dependent on its placental-fetal circulation secured by its heart. Respiratory depressants in the fetal circulation at the moment of birth inevitably produce apnea.

Our indications for morphin during the first stage are:

(1) A rigid, hypersensitive os.

(2) Evidence of considerable pain with a probable first stage of several hours, as in most primiparas.

(3) The presence of nagging but ineffectual pains which irritate and exhaust the patient out of proportion to results.

Accordingly many of our patients, particularly if primiparas, get a single hypodermic of one-sixth grain of morphin. If it is desired to stop nagging pains and produce sleep, one-quarter grain is given. Patients in whom ineffective uterine action, that is, true primary uterine inertia, seems to be the cause of the delay are not given morphin.

At the beginning of the second stage, or if the patient suffers severely, shortly before dilatation is completed, the use of gas is begun. We begin with intermittent administration, that is, during the pain only, and with small amounts, as 30 gallons of nitrous oxid to 15 gallons of oxygen. As the head approaches the pelvic floor and finally strikes the perineum, the nitrous oxid is gradually increased in volume to 50 or 60 gallons, and the intervals between administrations are shortened. This gradual increase of the volume of the gas given is controlled by the patient's statement of pain or comfort during uterine contraction. As the perineum begins distending and the most painful stage of labor arrives, the gas is given still more continuously, until at the time of crowning, from 70 to 80 gallons of nitrous oxid are given practically continuously. When the head is born, the nitrous oxid is at once discontinued, and the patient sharply revived by a few inhalations of pure oxygen.

If the woman is a primipara with a rigid, inelastic perineum, and lacerations seem inevitable, we secure the utmost possible relaxation by switching to ether, and pushing to complete unconsciousness at the moment the head crowns the perineum.

All this requires perfect team work between the obstetrician and the anesthetist, who must be able to anticipate the operator's every move. Anything short of this fails to produce the perfect satisfaction of which this method is capable. The basic principle of its administration is to give sufficient nitrous oxid to secure relative freedom from pain, and add sufficient oxygen to prevent any cyanosis. Consciousness, freedom from pain, and good color may all be secured by proper technic.

Analgesia permits careful repair of all injuries except those of the cervix. If cervical repair must be undertaken, it is best to have the patient under anesthesia. The ease with which all these various demands of the operator may be met by the anesthetist constitutes one of the chief advantages of gas in labor.

ABNORMAL CASES

When merely making a test of labor preliminary to cesarean section, we administer no anesthetic. If satisfied that natural forces can engage the head and bring it into the pelvic cavity, we use gas freely from the beginning of the second stage, reinforcing the uterine contractions by hypodermic of pituitary extract, giving half an ampule and repeating as the effect wears away.

Under these circumstances we have had some brilliant results, the active cooperation of the patient over a considerable period, made possible by her relative freedom from pain in the presence of vigorous uterine contractions, being highly satisfactory.

Several babies have been secured in this way, in cases in which we desired to avoid abdominal section on account of the risk of previous contamination. Of course this requires that the obstetrician should be reasonably sure of his diagnosis, and be equipped for major work, if this becomes necessary. I do not mean to minimize the risk of careless or incompetent use of pituitary extract.

When forceps are to be used, gas analgesia is merely increased to complete anesthesia; at the perineal stage ether vapor is added to secure the utmost relaxation in order to avoid laceration.

Webster[1] mentions version as one of the conditions for which he employs gas. I disagree with him in regard to this, believing that the relaxation required for this procedure renders ether by far the better anesthetic for this purpose.

When doing abdominal section for the usual indication, disproportion, ether is our choice of anesthetic because of the greater ease of manipulation under it. When in addition these cases are severely toxic, we use gas with the addition of ether vapor for relaxation as required.

For all minor obstetric procedures, cervical dilatation preliminary to introducing bags, curetting for retained secundines in miscarriage, etc., gas is given the preference.

CONCLUSION

I wish to enter a vigorous protest against the advice at present being so freely given that any one may use gas in labor cases with perfect safety. Gas is a power-

1. Webster, J. C.: Nitrous Oxid Gas Analgesia in Obstetrics, The Journal A. M. A., March 6, 1915, p. 812.

ful therapeutic agent with infinite possibilities for harm at the hands of incompetent or careless users. The statement has been made and is, I believe accepted, that gas in the hands of an expert is a safe anesthetic, but *the most dangerous* anesthetic if given by a novice. Of course this is far too strong a statement to make concerning analgesia. Even here, however, some knowledge and experience are necessary to secure both safety and satisfaction from its use. Moreover, the temptation to follow a gas analgesia labor with a gas anesthesia for repair is so obvious that I would earnestly urge all those expecting to adopt this method to spend sufficient time in special study of the agents he is to use, so that he can direct its administration. This does not mean that a doctor must equip himself as a gas expert. The skill necessary for its use in labor can be acquired in a short time, but free use of gas by the absolutely inexperienced will surely lead to tragedies.

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NOTES ON NITROUS OXID ADMINISTRATION

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Even with the accumulated knowledge gained from several years' experience in the prolonged administration of nitrous oxid (and oxygen), there is still quite a tendency by some to disregard essential elements of safety, especially when nitrous oxid, administered with normal oxygenation, does not furnish a sufficient depth of anesthesia. Increasing the percentage, and therefore the amount, of nitrous oxid inhaled of course deepens the anesthesia, and this is often a great desideratum; but the increase in the depth of anesthesia thus gained simultaneously decreases the oxygenation, and herein lurks the danger. Most patients can tolerate a decreased oxygenation for a short time, and when one has had experience with this class of patients, the anesthetist thereby becomes emboldened to minimize the danger arising from subnormal oxygenation. Sooner or later, a patient who cannot tolerate even temporarily a decreased oxygenation reaches the service of such an anesthetist, and serious results sometimes follow very quickly. It cannot be stated too frequently or too emphatically that with an anesthetic, cyanosis is a danger signal that should not be disregarded.

If the prolonged administration of nitrous oxid is to be confined to the cases in which it may properly be used as the sole anesthetic, its use is quite limited, and in many clinics its field is thus restricted, straight ether being the usual anesthetic. As ether and nitrous oxid are synergistic in anesthetic action, it is not necessary thus to restrict the use of nitrous oxid. Aside from the use of alkaloidal adjuvants, the safe way to increase the depth of anesthesia under nitrous oxid is by the addition of ether, small amounts usually being sufficient. But even when a considerable amount of adjuvant ether is required to secure the desired depth of anesthesia, the amount of adjuvant ether is considerably less than would have been the amount of straight ether required. That is, when nitrous oxid is administered throughout, it reduces the amount of ether required, and in this way reduces the toxication of the anesthesia to a minimum.

The toxication of a substance is not in direct proportion to the amounts used. The system is able to tolerate certain amounts of toxic substances without deleterious effect; but after this limit is reached, the addition of only fractional amounts will produce effects much more pronounced than the proportion these amounts bear to each other. That is, one-half grain of morphin produces more than twice the toxic effect of one-quarter grain, if one-quarter grain is the limit that can be tolerated without deleterious effect. So it is with ether adjuvant to nitrous oxid; the resulting ether toxication is much less than the proportion the adjuvant ether bears to the amount of straight ether that would have been required.

The addition of a small amount of ether to nitrous oxid not only increases the depth of anesthesia but acts as a stimulant as well, and in this particular enhances the safety of nitrous oxid. To insist, as some do, that either straight nitrous oxid or straight ether shall be administered is to limit greatly the use of this most bland anesthetic, and at the same time create such a general atmosphere that when it is used, if with normal oxygenation it does not furnish sufficient depth of anesthesia, the nitrous oxid is increased by decreasing the oxygen, thus in a small or greater degree endangering the patient. The desired depth of anesthesia should, of course, be secured; but undue emphasis placed on securing it with nitrous oxid alone paves the way to danger. The emphasis should be placed, not so much on the anesthetic as on the technic, for most anesthetics are comparatively safe with good technic, and no anesthetic is safe with poor technic.

Proper nitrous oxid administration requires more attention to technic than the other general anesthetics, yet its administration has not been standardized, and often the most ordinary scientific principles are violated. For instance, in many of the most popular and widely used apparatus for its administration, the patient rebreathes through a tube from 3 to 5 feet in length, and through parts of the stand that are neither sterilized nor cleansed. Simply because the patient does not know that he is to rebreathe for an hour or two through parts of an apparatus which have been similarly used by others, without having been previously subjected to the requirements of even ordinary cleanliness, is no reason why this unscientific and dangerous practice should continue to flourish. And why should any patient when operated on be forced to rebreathe through a long tube? Rebreathing through a long tube unnecessarily consumes the patient's energy at a time when it should be conserved, and causes an unduly rapid accumulation of carbon dioxid, on account of the space in the mask and long tube preventing an immediate and thorough mixture of the expirations with the contents of the bag. Rebreathing certainly enhances the safety of nitrous oxid, but whenever rebreathing is used, the bag should be close to the patient's face.

The frequent use of a breathing tube to prevent respiratory restriction cannot be too strongly urged. Nitrous oxid causes more swelling of the soft tissues of the upper respiratory tract than the other anesthetics, and at the same time it increases the volume of respiration per unit of time; in its administration, therefore, it is very important to keep the respiratory passages open. Whenever respiratory restriction exists, the patient is directly devitalized by the

greatly increased burden thrown on respiration and circulation, more especially when the restriction is on the expiratory movement. Before a breathing tube is inserted, the patient must be sufficiently anesthetized so that the pharyngeal reflex is abolished, or else the patient will gag and cough, thereby retarding the induction or disturbing the anesthesia. In ether administration, also, the prevention of partial obstruction of the air passages is greatly neglected. Anesthesia is much easier and more smoothly maintained when the respiratory movement is free and unrestricted.

Preliminary medication in nitrous oxid administration is a very important matter. Morphin tends to allay preoperative fear, and renders the induction smoother. Gatch has shown that struggling during induction is very detrimental to the heart, and all observers agree that patients who have struggled do badly under anesthesia. Besides, morphin blocks both afferent and efferent impulses, thus preventing shock and rendering the anesthesia deeper and smoother. Nitrous oxid anesthesia is so evanescent that very often an opiate is required for the postoperative pain immediately after the anesthetic is withdrawn, if no opiate has been administered as a preliminary. It is advisable to have the opiate administered before the trauma is produced, for otherwise larger amounts will be required to relieve the pain. Most, if not all, of the trouble arising from the use of preliminary morphin has been caused from too large dosage. Larger amounts than one-sixth grain morphin, or its equivalent, should be used only in vigorous subjects, and the larger amounts should always be fortified with atropin.

The use of a local anesthetic to block off the traumatized areas is not nearly so general as its merit warrants. There is no question but that this procedure, when properly carried out, prevents shock and permits a lighter general anesthesia, and this is especially shown when nitrous oxid is administered. The removal of the gallbladder requires the deepest type of anesthesia, yet when the local anesthesia is perfect, I have not had to add any ether whatever to nitrous oxid, even in this class of work. The credit, moreover, for this achievement belongs entirely to the surgeon, for it is his technic that renders it possible to have such a light general anesthesia in procedures that ordinarily require the deepest type of general anesthesia.

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Results of a Psychologic Examination of Criminals in Massachusetts.—In Bulletin 17, issued by the Massachusetts State Board of Insanity, there is presented a tabulated report of the results obtained from the psychologic examination of 300 criminals who had been selected alphabetically from the prison records in the Massachusetts State Prison. They were examined by the "point scale" method, which has been worked out for norms to the age of 15 plus for English speaking subjects and to 14 plus for non-English speaking subjects. When persons grade up to these figures, they are considered to be outside the feebleminded class. From the results of the examination it was ascertained that of these 300 cases, 22 per cent. were feebleminded, 9.6 per cent. were borderline cases, and 3.3 per cent. were probably psychotic. It was shown that the highest percentage of feebleminded persons is found among prisoners who are guilty of sex offenses, and the lowest is found among prisoners who are guilty of crimes against property, while the percentage of probably psychotic subjects is highest among those prisoners who are guilty of crimes against life.

THE TREATMENT OF DIPHTHERIA CARRIERS WITH IODIZED PHENOL

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Diphtheria carriers have always been a serious problem, and many methods to rid the unfortunate individuals of diphtheria organisms have been tried. The multiplicity of the forms of treatment advocated is proof of the unsatisfactory results obtained with any one method. Spraying the throat with cultures of *Staphylococcus pyogenes aureus* was at one time much in vogue. This proved to be too dangerous a procedure,[1] and has been abandoned generally. Wood[2] suggested and used a spray of *Bacillus acidi lactici* in the throat with good results. C. Hampsen Jones[3] used Bolton's solution in the throat of carriers with some benefit. Hektoen and Rappaport[4] advocate the use of kaolin in the nose and throat, and assert that the mucous membrane of these passages is almost rendered sterile by the use of this substance. Good results have been reported with the use of autogenous vaccines by some,[5] but others have found them disappointing. The most common practice, and the one that has stood the test of time, has been the application of various chemicals, such as silver nitrate and hydrogen peroxid, to the throat and nose. But this often fails to rid the carriers of the diphtheria organisms, and the patient remains isolated for months.

The method of treatment described below has given good results in the relatively small number of cases in which we have had the opportunity of using it. It is suggested, therefore, with the hope that further experience with this method will prove it to be of real value in the treatment of diphtheria carriers.

The cases reported consist of carriers convalescent from clinical diphtheria in the infectious ward of the Charity Hospital, and some that did not have diphtheria but were persistent carriers. In some cases, other methods had been persistently tried with failure to obtain negative cultures.

In all cases reported here, iodized phenol (acidum carbolicum iodatum) of the National Formulary was used. It contains 60 per cent. phenol (carbolic acid), 20 per cent. iodin crystals and 20 per cent. glycerin. In pharyngeal cases, the tonsils, uvula and posterior wall of the pharynx were swabbed every forty-eight hours until negative cultures were obtained. In nasal cases, the entire anterior part of the nasal cavity was swabbed with iodized phenol every forty-eight hours. Care was taken not to allow the preparation to run over the face or drop into the larynx. Cultures were always made a few minutes before the local application. In this way, forty-eight hours elapsed after each application of iodized phenol before another culture was made.

Seventeen cases were treated. Negative cultures were obtained after one application of iodized phenol

1. Davis, Clara M.: Tonsillitis Following Use of Staphylococcus Spray, THE JOURNAL A. M. A., Aug. 9, 1913, p. 393. Rolleston, J. D.: Brit. Jour. Chil. Dis., 1913, x, 298.
2. Wood, H. B.: Lactic Acid Bacillus Spray for Diphtheria, THE JOURNAL A. M. A., Aug. 9, 1913, p. 392.
3. Jones, C. Hampsen, quoted by Rührah: Progr. Med., March, 1914, p. 165.
4. Hektoen, L., and Rappaport, B.: The Use of Kaolin to Remove Bacteria from the Throat and Nose, THE JOURNAL A. M. A., June 12, 1915, p. 1985.
5. Hewlett and Nankivell: Lancet, London, 1912, clxxxiii, 143. Weil: New Orleans Med. and Surg. Jour., November, 1914.

in six cases (35 per cent.); after the second application in five cases (29 per cent.); after the third application in two cases (12 per cent.); after the fifth application in one case (6 per cent.), and after the sixth application in two cases (12 per cent.). One case (nasal) was under treatment for twenty-one days and required nine applications before negative cultures were obtained. With the exception of this case, none of the other sixteen were under treatment longer than eleven days.

Fifteen of the cases were followed after leaving the hospital, and negative cultures obtained in all. No treatment had been used since the discharge of the patients from the hospital, and all of them had been out from one to three weeks when these cultures were made.

No bad results have been noticed from the use of this rather strong preparation in the nose and throat. The application is painful for half a minute or less until the anesthetic action of the phenol takes effect. There is a thin escharotic membrane formed at the site of application which remains for about twenty-four hours. This disappears entirely within forty-eight hours after swabbing, leaving the throat red for a few days. After the redness disappears, the throat returns to normal. This was true in the thirteen patients whose throats were examined from one to three weeks after leaving the hospital. The throat, in each case, was found to be as normal in appearance as before the treatment was begun.

The manner in which this preparation acts in ridding the throat of diphtheria organisms so promptly, we do not know. It has been proved by Albert[6] that the bacteria in carriers are harbored in the crypts of the tonsils and are not on the surface of the mucous membrane of the nasopharynx. Kretschmer[7] cured carriers by squeezing the crypts of the tonsils. The phenol in the preparation undoubtedly destroys the outer layers of the epithelium. It probably does not reach the organisms in the crypts, but it may permit the more thorough penetration of the iodin. In this way the iodin may reach and destroy the harbored organisms with more certainty than it does when applied alone.

In the cases reported below, the patients were admitted to the infectious service of Charity Hospital during the year 1915.

REPORT OF CASES

CASE 1.—R. W. (B 5960), colored girl, aged 14; admitted, November 18, with pharyngeal diphtheria; clear, November 22. Positive cultures, November 29 and December 1 and 3. Swabbed with iodized phenol, December 3. Negative cultures, December 5 and 7. Discharged, December 8. December 27, negative culture and throat normal.

CASE 2.—S. W. (B 5703), colored girl, aged 8; admitted, November 14, with pharyngeal diphtheria; clear, November 19. Positive cultures, November 29 and December 1 and 3. Swabbed with iodized phenol, December 3. Negative cultures, December 5 and 7. Discharged, December 8. December 27, negative culture and throat normal.

CASE 3.—H. S. (B 5983), white boy, aged 11; admitted, November 19, with pharyngeal diphtheria; clear, November 21. Positive cultures, November 29 and December 1, 3 and 5. Swabbed with iodized phenol, December 5. Negative cultures, December 7 and 9. Discharged, December 10. December 27, negative culture; tonsillitis.

CASE 4.—E. P. (B 7336), colored woman, aged 23; admitted, December 19, as carrier, gave repeated positive cultures for three weeks previous to admittance. Positive culture, December 21. Swabbed with iodized phenol, December 21 and 23. Negative cultures, December 23 and 25. Discharged, December 26. Wrong address and could not follow.

CASE 5.—N. H. (B 6924), white girl, aged 6, admitted, December 9, as carrier, gave positive nasal cultures, December 9 and 11. Anterior nares swabbed with iodized phenol, December 13 and 15. Negative cultures, December 15 and 17. Discharged, December 18. Not followed.

CASE 6.—M. W. (B 2535), white girl, aged 3, admitted, August 19, with nasal diphtheria, gave a positive nasal culture on day of admittance. Antitoxin, August 21. Negative cultures, August 29 and 31. Sent home. Readmitted, September 13, with a nasal discharge. Positive nasal and negative throat. Antitoxin (10,000 units), September 18. Nose swabbed with silver nitrate (25, 50 and 75 per cent.) until October 22. Autogenous vaccine in increasing doses from October 22 to December 12. Positive cultures obtained every second day from October 1 to December 1, in spite of the vaccine and local treatment of the nose. Nose swabbed with iodized phenol, December 1 and 3. Negative cultures, December 3 and 5. Nasal discharge greatly decreased in forty-eight hours after first application of iodized phenol; stopped altogether after three days. Discharged, December 13, with no discharge from nose but some erosion. Up to the time of iodized phenol applications, the discharge had been profuse and bloody. December 27, negative nasal culture and no nasal discharge.

CASE 7.—L. C. (B 5449), white boy, aged 4; admitted, November 9, with pharyngeal diphtheria; clear, November 13. Positive cultures, November 18, 23, 27 and 29 and December 1. Swabbed with iodized phenol, December 1 and 3. Positive culture, December 3. Negative cultures, December 5 and 7. Discharged, December 8. December 27, negative culture and throat normal.

CASE 8.—R. W. (B. 5947), colored man, aged 19; admitted November 11, with pharyngeal diphtheria; clear, November 21. Positive cultures, November 29 and December 1. Swabbed, December 1 and 3, with iodized phenol. Positive culture, December 3. Negative, December 5 and 7. Discharged, December 8. December 27, negative culture and throat normal.

CASE 9.—J. W. (B 5702), colored boy, aged 10; admitted, November 11, with pharyngeal diphtheria; clear, November 18. Negative culture, November 25. Positive, November 27 and 29. Negative, December 1. Swabbed, December 1 and 3, with iodized phenol. Positive, December 3. Negative cultures, December 5 and 7. Discharged, December 8. December 26, negative culture and throat normal.

CASE 10.—M. B., female nurse on duty in infectious ward. No clinical diphtheria but tonsillitis. Positive culture, December 6. Negative, December 12. Positive, December 15. Swabbed, December 15 and 17. Culture positive, December 17. Negative, December 19 and 21. Released, December 22. January 8, negative culture. Throat showed old adhesions and bad tonsils. These were present before application of iodized phenol.

CASE 11.—M. C. (B 6825), white girl, aged 12; admitted, December 7, with pharyngeal diphtheria; clear, December 10. Positive cultures, December 17 and 19. Swabbed with iodized phenol, December 19, 21 and 23. Positive, December 21. Negative, December 23 and 25. Discharged, December 26. January 4, negative culture, and tonsils somewhat congested from attack of tonsillitis.

CASE 12.—S. M. (B 5667), colored woman, aged 22; admitted, November 13, with pharyngeal diphtheria; clear, November 19. Positive culture, November 24 and 27 and December 1. Swabbed with silver nitrate every forty-eight hours until November 29. Swabbed with iodized phenol, December 1, 3, 7 and 9. Positive cultures, December 3, 5 and 7. Negative, December 9 and 11. Discharged, December 12. December 27, negative culture; tonsils enlarged and patient had follicular tonsillitis.

CASE 13.—M. M. (B 6932), white boy, aged 4, admitted, December 9, as carrier, gave previous positive cultures. Positive nose and throat, December 11. Throat swabbed,

6. Albert, Henry: The Treatment of Diphtheria Carriers, THE JOURNAL A. M. A., Sept. 27, 1913, p. 1027.
7. Kretschmer: Zur Bekämpfung der Bacillenpersistenz bei Diphtheriere-konvaleszenten, Med. Klin., 1911, vii, No. 3.

December 15, 19 and 21, and negative cultures, December 21 and 23. Nose swabbed, December 15, 19 and 23, and cultures negative, December 23 and 25. Discharged, December 26. January 9, throat and nasal cultures negative; nose and throat normal.

Case 14.—A. D. (B 6209), white boy, aged 5, admitted, November 23, with laryngeal diphtheria; intubated; tracheotomized, November 27; wound closed, December 18. Positive throat cultures, December 11, 13, 15, 17 and 19. Swabbed, December 19, 21, 23, 25, 27, 29 and 31. Positive culture, December 21, 23, 25, 27 and 29. Negative, December 31 and January 2. Discharged, January 3. January 12, negative culture, and throat normal except somewhat congested.

Case 15.—H. M. (B 5624), white boy, aged 14; admitted, November 12, with pharyngeal diphtheria; clear, November 14. Positive cultures, November 22, 24, 27 and 29 and December 1 and 3. Swabbed with iodized phenol, December 1, 3, 7, 9, 11 and 13. Positive, December 3, 5, 7, 9 and 11. Negative, December 13 and 15. Discharged, December 16. December 27, negative culture; throat clear and normal in appearance.

Case 16.—M. G. (B 6849), white girl, aged 8; admitted, December 12, with pharyngeal diphtheria; clear, December 10. Positive cultures, December 17 and 19. Swabbed with iodized phenol, December 19, 21, 23, 25, 27, 29 and 31. Positive, December 21, 23, 25, 27 and 29. Negative, December 31 and January 2. Discharged, January 3. January 9, negative culture and throat normal.

Case 17.—P. A. (B 5469), white girl, aged 2½ years; admitted, November 9, with nasal diphtheria; nasal cultures positive, November 27 and 29 and December 1. Swabbed with iodized phenol, December 1, 3, 5, 7, 11, 13, 15, 19, 21 and 23. Positive cultures, December 3, 5, 7, 9, 11, 13, 17, 19 and 21. Negative, December 23 and 25. Nasal discharge almost stopped, December 25. January 4, negative culture; discharge still present.

Charity Hospital.

THE FOLLOW UP SYSTEM OF THE PRESBYTERIAN HOSPITAL IN THE CITY OF NEW YORK

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In the spring of 1914 a committee was appointed by Professor Brewer to plan and establish a system for following the end-results for all cases treated by the surgical staff of the hospital. While, previously, individual surgeons had taken pains carefully to look up groups of cases in which they had a particular interest and therefore gave disproportionate attention during and after the hospital stay, nevertheless, the end-results in the great body of routine cases had been neglected.

With the advice and aid of Prof. Adrian V. S. Lambert, a system was devised and put in operation in August, 1914. It is my purpose to describe it and give a report of the first year's work. The system is the outgrowth of one used on a small scale in looking up special classes of cases, enlarged to fit the needs of the entire surgical service. It divides itself into three lines of endeavor:

1. To persuade the patient to return. On discharge from the hospital, he is given a card on which is written a definite date and hour for examination. If he does not appear, he is immediately sent a letter making a definite appointment, a week later. Should he again fail, he is taken up by a social service worker who persuades him to return, or, failing this, obtains as complete information about him as possible.

2. To gain and record the proper notes. In the record room of this hospital the case records are bound in volumes of fifty records each and numbered chronologically according to date of discharge. These volumes are too bulky to be handed about the hospital; therefore the following plan has been followed: When the house surgeon completes the case record, he makes an abstract of it which contains all its essential points. This is copied and sent with a scratch card to the examining surgeon, who thus has the main data of the case and a definite card on which to make his notes. These notes are typed on a sheet of paper which, when the case is closed, is pasted into the bound volume. With the advent of the unit history system, the patient's unit record will be sent complete to the examining room and the notes inscribed directly, with the consequent elimination of the foregoing steps.

3. To maintain the interest of the attending surgeons, they are notified by mail of the various appointments for the next examining day with patients whom they have treated in the wards.

The forms and letters used to carry out the system comprise:

A. The regular hospital bedside or name card.

B. A card given to the patient asking him to return. On one side is printed:

Name ——— No. ———

We are asking you to return to see us for a few minutes in order that we may carefully watch the result of your treatment in the hospital.

By so doing we may give you advice about yourself and learn something which will aid us in treating other patients.

If you will call at the hospital at the time written on the other side of this card you will be directed to the Doctor whom you are to see.

On the other side is printed:

Please come to the hospital and bring this card with you
[Date]

. . . . . .

If you change your address send your new address to
The Presbyterian Hospital
70th Street and Madison Avenue
New York City

C. A letter to be sent to the patient if he fails to return in response to the request on the card:

We asked you to come to the hospital on ——— and have not yet heard from you. As we explained in the last notice, we wish to find out your present condition.

The treatment in the hospital gives different results in different individuals. It is therefore extremely important that we should know your present condition in order that we may be able to give you correct advice and at the same time complete our record of your case.

If you will call at the hospital ——— you will be directed to the doctor with whom you are to consult.

Very truly yours,

———

D. An 8 by 15 sheet so folded as to make a 5 by 8 folder. On the 5 by 8 face is copied the house surgeon's abstract. On the reverse side of the 8 by 10 portion are typed the notes made by the examining surgeon. While the case is still being followed, the whole folder is filed numerically. When the case is finally closed, the 8 by 10 portion is torn off and pasted in the bound volume, while the 5 by 8 abstract retains its place in the file. On the 5 by 8 face is printed:

Name ———	History No. ———
Address ———	O. P. D. No. ———
Permanent Address of Friend ———	Admitted ———
Address of Family Physician ———	Discharged ———
Diagnosis ———	Operator ———
Treatment ———	Date of operation ———

IMPORTANT POINTS OF RECORD

History:
Operation { Procedure:
{ Pathology:
Course:
Condition on Discharge:

At the top of the 8 by 10 portion is printed:

Name ——— History No. ———

E. A carbon copy of the 5 by 8 abstract to be used to hand about the hospital to guard the master sheet from loss. On the reverse side is typed a copy of the current follow up notes.

F. A scratch card for the convenience of the examining surgeon. On one side of this card is printed:

SURGICAL CONDITION

Name ——— History No. ———
Date of Examination ——— Date to Return ———
Effect of treatment on chief complaints (pain, function, deformity, etc.):
Wound closed ——— after operation.
Symptoms developed since operation:

GENERAL CONDITION

Weight ——— Present weight ———
Strength ——— Present strength ——— % of normal
Work partially resumed ——— P. O.
Present earning capacity ——— % of normal
Appetite:
Bowels { Regular { With catharsis / Irregular { Without catharsis
General body systems:
Please remember to fill in the dates at the top of this sheet.

G. A calendar file of twelve monthly guide cards, and under each month five weekly subguide cards.

H. A letter form sent to each attending surgeon notifying him what patients of his are expected to report on the date mentioned:

Dear Doctor:
The following cases operated upon or treated by you are due to report between 9:00 and 11:00 a. m. on Sunday: ———
Name Diagnosis Treatment
. . . . . .

The following is the detailed working of the scheme:

1. During the convalescence the attempt is made by the visiting and resident surgeons and the nursing staff, in conversation, to impress the patient with the importance and desirability of returning to the hospital for subsequent examinations.

2. On the regular bedside or name card (*A*) the house surgeon indicates, under the heading of remarks, the Sunday on which the patient is to return for observation, thus, "second Sunday in January." This first visit is made about two months after discharge from the hospital.

3. The nurse in charge of the ward finds this "second Sunday in January" on the calendar and writes it on the card (*B*) thus "Sunday, January 10, at 9 o'clock in the morning." On the reverse side she writes his name and history number and gives the card to the patient.

4. When the house surgeon completes the record of the case he makes a short abstract following the same headings as indicated on the abstract sheet (*D*).

5. The bedside card and the case record reach the record room in the natural order of events. The record clerk takes the data from them to make out the abstract sheet (*D*). In a column "To Return" at the right of the sheet she types the date set by the house surgeon for the first follow up examination.

6. The carbon copy (*E*) and the scratch card (*F*) are clipped together and filed under this date in the file (*G*).

7. When the date set for examining the patient arrives, all the cards for this date are arranged according to sex and alphabetically and sent to the examining room. At the same time the record clerk makes out the notification sheet (*H*) to each visiting surgeon.

8. The examiner writes his notes on the scratch card (*F*), being very particular to write after the heading "To Return" the date on which the patient is to be next examined. If the case needs no further investigation he writes "Close record." This date starts the whole machinery afresh just as did that indicated by the house surgeon.

9. The cards *E* and *F* are returned to the record room. The record clerk copies the notes on the 8 by 10 section of *D* and on the reverse of *E*. *E* and a freshly prepared *F* are filed under the date last indicated, and *D* returned to the numerical file.

10. If the patient fails to appear, the record clerk knows it because of the blank sheet returned from the examining room. She immediately sends him the letter (*C*), dating it for the next Sunday, when the abstract and scratch card are again sent down.

11. Should he again fail to appear, his name is given to the social worker, who persuades him to return, or, failing this, gains what data she can. Two weeks are allowed for this search, so that by three weeks after the proper date for examination the patient is either reported on in some manner or marked "Lost." Two classes of reports are turned in by the social worker: (*a*) a medical report in which sufficient data are given for determining the present clinical result, and (*b*) an "incomplete" report which, although not containing complete medical information, nevertheless gives some knowledge of the patient's earning capacity, general health, etc.

Of irregular cases there are two important classes: those patients living out of town and those who straggle into the hospital at odd times. The former we have as yet made no systematic effort to follow, although many report by mail in response to the card given them in the ward. The stragglers are referred to the accident room, where on request by telephone the history abstract is sent. The further examination is conducted, as previously described, by the intern on duty.

The personnel required thus far has consisted of one full time assistant clerk in the record room, two assistant visiting surgeons working three hours a week each, and the full time of one social service worker. The latter, in addition to hunting up the cases outside the hospital, aids in the work of the Sunday morning clinic. By so doing she not only keeps more intimate track of the patients and gets to know them individually, but also learns the type of information desired in the follow up work.

One assistant surgeon is designated "the follow up committee," and has general oversight of the follow up work.

RESULTS

	Number		Per Cent.
Personally appeared for examination at the hospital:			
Response to card given in ward	1,018		44.7
Response to letter	526		23.1
Response to social service	213		9.4
Total		1,757	77.2
Medical information obtained directly:			
By letter from patient	44		1.9
Through social service	33		1.4
Total		77	3.3
Information about patient obtained by social service (earning capacity, general health, incomplete medical data, etc.)	252		11.1
Total		252	11.1
Grand total of patients about whom information has been obtained		2,086	91.6
Cases lost:			
Out of town cases not followed	155		6.8
Not found by any part of system	37		1.6
Total		192	8.4
Total patients asked to return		2,278	100

The 2,278 cases recorded in the accompanying table comprise all those followed, including patients asked to come back a number of times, as many as four. Of the cases lost, it should be noticed that there were only 1.6 per cent. which had been the object of the systematic search.

The table states clearly the results of the first year of operation of the system. We feel that the year's average will discount any initial overenthusiasm on the part of those working for the system, as will also a rather opposite attitude of a small number toward added work from another innovation, so that the results indicate what may be fairly expected in New York, whose immigrant population shifts about as frequently as in any city. Possibly the 6.8 per cent. of out of town cases should not be put down as failures; but inasmuch as we have heard from some of them, they have so been classified.

Concerning the clinical data obtained or the disposition of the cases, no tabulation has been made; they are available in each case for those looking up an individual case or classes of cases. Whether or not all types of cases should be followed has been much discussed. The present feeling is that any case serious enough for hospital treatment is worthy of being subsequently followed. Indeed, it has been in the so-called "minor" cases that the greatest surprises in end-results have occurred.

After careful watching of all parts of the system for a year, various improvements have suggested themselves. The adoption of a unit history system will do away with all abstracting and duplication. The notes will be written only once and on the record sheet proper. One of the most difficult steps in the work has been to convey to the patient the reason for asking him to return. The majority of them come back for the first visit merely because we ask them to. The social service worker finds that this lack of understanding is responsible for the failure of the majority of those able to return who fail to do so. In the belief that one used to handling patients from this standpoint, and especially one who will later see them can talk to them better than a changing surgical staff, it is now proposed to have the social worker doing this work attend to the making of all appointments.

Other causes of failure have been those usual in any social work: illiteracy, dissatisfaction with treatment, fear of being dunned for money, giving of false addresses, etc.

Factors working for success have been: the obtaining of accurate addresses, particularly that of a friend having a fixed place of business, the giving to the patients of a clear understanding of the purposes of follow up work, definiteness in appointments and directions, the demonstration of an interest in the patient as an individual rather than a "case," and a certain amount of dispatch in handling the case when the patient returns for examination.

One pleasing feature has been the recent referring of new patients by old ones "because they watch you so carefully afterward."

Disinfection.—Terminal disinfection no longer holds a prominent place in the control of infectious diseases, for the reason that by the time the infective agent has disappeared from the person of the patient, it has long since disappeared from the premises and surroundings.—John S. Billings, M.D., *American Journal of Public Health*, December, 1915.

THE CONTROL OF DIPHTHERIA EPIDEMICS

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For the control of diphtheria epidemics we now have a means which is practical, efficient, and available to any physician. Schick, working in von Pirquet's clinic in Vienna, discovered the value of this test, and therefore it is known as Schick's test. It requires no special technic that is not easily acquired by any physician.

The test depends on the reaction of nonimmunes to an injection of diphtheria toxin, the amount of which is a one-fiftieth minimum lethal dose for a 250 gm. guinea-pig. The necessary articles are a 1 c.c. hypodermic syringe graduated into tenths, a very fine needle, sterile normal salt solution, and the diphtheria toxin. The toxin is diluted in the salt solution according to the strength as determined by laboratory tests. The amount of the solution used will depend on the dilution. It will be found convenient to make the dilution so that approximately 0.2 c.c. will be the proper amount, as it makes a good sized bleb.

The injection should be made into the skin and not subcutaneously. This is easily accomplished if a small bit of the skin is held tightly between the thumb and forefinger of one hand, and the barrel of the syringe in the other is held lower than the needle point. The reaction if positive is shown by an area of inflammation varying in extent from 2 to 5 cm. It is more intense in the center, and endures for about ten days to two weeks, when it gradually disappears, leaving a brown desquamating surface. Those giving such a reaction are susceptible to diphtheria, while those who do not have a natural immunity which is adequate to protect them.

Diphtheria, especially in congested districts and where individuals are brought in close daily contact, spreads very rapidly until every susceptible individual has been attacked. Heroic means have been used to quell the infection and prevent the further spread with but partial success. The fight has been made with throat swabs, quarantine and isolation. These have served to check the progress, and to prevent the disease from visiting every person in the community; still it has not been altogether satisfactory.

The measures most commonly employed in the fight against diphtheria epidemics are throat swabs, quarantining or isolation, as the case may be, of those from whose throats cultures of diphtheria bacilli are obtained. The fault of such a method is that it is never possible, or seldom so, to separate every individual during the time that it is necessary to incubate the cultures and before which it cannot be known who is carrying the infection, and unless that can be done, it is very obvious that during the twelve to eighteen hours in which the cultures are being incubated, those who have infected throats are passing the infection to others, so that when it is known which cultures show the specific organism, quarantine of these persons can bring only partial success in the fight against the further spread of the disease, because of those who have been infected in the meantime. And it is by no means always possible to isolate every person who has been exposed, for even twelve to eighteen hours. Such was the case in the epidemic cited below.

The only other way to put an end promptly to the epidemic is to inoculate every person exposed with a prophylactic dose of antitoxin. This necessitates an expense, half of which may be saved by using Schick's test.

It is therefore plain that the present methods which are commonly employed against diphtheria epidemics are unsatisfactory. They do not at all meet the exigency of the occasion. Schick's test, however, answers all the requirements in that it points out all those individuals who are susceptible, who do not have sufficient natural immunity, and these may be then given a prophylactic dose of antitoxin. In this case it makes no difference if the individuals exposed cannot be isolated, and it saves the expense of injecting all, as a good number will have natural immunity enough to protect them.

The circumstances of an epidemic of diphtheria, which occurred in a school for the blind, is a striking example of the efficiency of the Schick test. The conditions in the school were unusual for the rapid spread of the disease. The organism had fallen on fertile ground both as to physical condition of the noses and throats of the pupils and as to means for its propagation. Every child in school had badly diseased tonsils, and a large majority had adenoids, some of which hung down into the pharynx. They groped their way from corridor to corridor by sliding their fingers along the walls, they felt their way up and down stairs by slipping along the banisters, and they recognized each other by the sense of touch. The library, the books of which were daily handled by nearly every child, became a depository for the germs. On the leaves of these books, as the lines were traced by the infected fingers of the carrier, were left the organisms to be picked up by the next reader. To stop the epidemic before it could get under good headway was imperative. It was thought that the swab method alone might accomplish the desired result, and accordingly all throats were swabbed, 150 in all, and the swabs sent to the State Laboratory of Hygiene, by Dr. Hoyt, the deputy state health officer.

At that time only four cases had occurred, and out of the 150 swabs only four positive cultures were secured. The disease abated for a short while, but in a little over a week two new patients came down, and it was at that time that it was decided to use Schick's test.

The pupils were taken first, having been placed in a line and marched first through the wash room where their sleeves were rolled up to above the insertion of the deltoid muscle, and an arm washed with green soap and water and cleaned with alcohol. They were then marched through the room, where they received their injection, and as each one received his injection a throat swab was taken. After the pupils the teachers and help were treated in the same manner.

Ninety-one pupils were tested, forty-four girls and forty-seven boys, and fifty-six others, which included the teachers in the institute and the help. The arms were inspected for inflammatory reactions at the end of thirty-six hours, and all showing a positive reaction were given 1,000 units of antitoxin. At that time out of the number tested, forty-four showed an undoubted positive reaction, and ten were doubtful. Only ten boys showed a positive reaction. They were all aged 12 years or older. Among the teachers and help, all of whom were past the age of maturity, thirteen gave a positive reaction, and twenty-one out of the forty-four of the girl pupils showed a positive reaction. The doubtful cases showed varying degrees of intensity in the reaction, and therefore only those showing the most pronounced effect of the injection were treated with a prophylactic dose of antitoxin. This was partly because I was a little short in my supply of antitoxin and partly because some of the reactions were judged to be pseudoreactions and therefore would not need any prevention, instead of an incomplete reaction due to the possession of a partial degree of immunity. There were five out of the ten doubtful ones to whom I thought it advisable to give a prophylactic dose of antitoxin. The other five were allowed to go without it. Just one week from that time one of the five who had not been given treatment but who had had a doubtful Schick reaction developed diphtheria. After that no more cases occurred.

In the meantime the swabs which had been taken when the tests were made disclosed six positive throat cultures. Of this number four showed by a positive reaction that they did not possess enough immunity, $\frac{1}{31}$ unit of antitoxin to the cubic centimeter of blood, to protect them, and therefore were given 1,000 units, while one gave no reaction. The pupil giving a negative reaction was undoubtedly a carrier. He was given 1,000 units of antitoxin, as it was thought that perhaps it might aid in securing a negative culture. This was of no avail, however, for he is still a carrier. Many agents have been employed in his treatment, among them being kaolin.

The true reaction is not always easy to differentiate from the pseudoreaction, particularly because there are some who possess just enough immunity to spoil the reaction and not yet enough to prevent them from developing the disease. I am inclined to believe, too, that it is just such persons as these who may show a belated reaction. Even after seventy-two hours there were six pupils and one other who developed marked inflammation, enough to make it necessary to give these an immunizing dose of antitoxin. The induration does not always seem to be a guide, as some of the inflammatory reactions which did not prove to be a result of the toxin injected showed less induration than those which were a result of the toxin. The extent and severity of the inflammation certainly can be no guide, for the variety in this particular is marked. The patient who had a doubtful Schick reaction and afterward developed diphtheria was an example in proof of this, for the reaction in this case was only a small fringe of red around the area into which the injection had been made. However, in every case which showed a susceptibility to the toxin, whether the reaction was extensive or small, tenderness was a marked sign, and complaint could be elicited on slight pressure. Those whose reaction was due to other causes than the cellular response to the toxin seemed to be less sensitive to slight pressure.

Those with extremely sensitive skin may show an inflammatory reaction somewhat similar to those who for one reason or another do not react characteristically. In one case which I observed, in a few minutes after the bleb had been made, the elevation disappeared and in its place was a dark spot. It looked very similar to the marks that are easily made on the skin by some slight bruises. When it was inspected at the end of thirty-six hours, there was a slight flush for considerable area around the dark center, which still remained, but pressure brought no pain. This indi-

vidual was not given any antitoxin, nor did she develop diphtheria.

The whole subject of the control of epidemics of diphtheria may be briefly summarized as follows: Methods commonly employed in the fight against diphtheria are not adequate; Schick's test requires no special technic that cannot be easily developed by any physician, and therefore is available to all; Schick's test is a prompt, economic and satisfactory method of quelling epidemics of diphtheria, when used together with swabs.

MALIGNANT DISEASE OF THE OVARIES

FURTHER STUDIES *

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Two years ago I read a paper before this association on the subject of sarcoma of the ovary. Since that time there have occurred in my practice three cases of malignant disease of the ovary. The occurrence of these cases prompted the further inquiry into the subject of malignant diseases of the ovary and prompted me to write this paper.

CASE 1.—Mrs. G., aged 33, came to me complaining of enlargement of the abdomen. She had been married twice and had one child, aged 16. Her general health had been good. I had operated on her seven years ago for a large papillary cyst of the left ovary complicated with pus tubes. She made an uneventful recovery and enjoyed good health. She has not menstruated for two years. Three years ago she first noticed the enlargement of the abdomen. Two months prior to her last visit to me she had had some irritability of the bladder. One maternal uncle and one maternal aunt died of cancer. Examination revealed a large pelvic tumor about the size of a seven month's pregnancy. The scar of the previous operation was quite thin. There was a large lymphatic gland in the right inguinal region the size of a hazelnut. This was said to have appeared three weeks ago as the result of a fall. She was operated on, September 8, and a large multilocular cystic tumor of the right ovary removed. The adhesions were very extensive and close, necessitating the baring of the ileac vessels and the ureter during the operation, together with a removal of part of the uterine wall to which the tumor was attached. The recovery was uninterrupted and the patient remains entirely well up to date. It should be added that there was no ascites.

Unfortunately this tumor was mislaid and destroyed, so it was not subjected to microscopic examination. A particularly interesting feature in this case was that seven years prior to this operation the patient had the opposite ovary removed for a large cystic tumor which was pronounced by the pathologist, Dr. Rhamy, to be a benign papillary cyst. That the pathologic diagnosis of this first specimen was correct I think the history of the case proves. I myself do not think there was any connection between the first tumor and the last. The last tumor removed was as nearly as I can judge from the gross specimen a malignant tumor of the ovary. Unfortunately this question cannot be settled unless there should be a recurrence which would result in a microscopic examination of the growth. The bilateral tendency of ovarian growths is well recognized, and, indeed, has led some men to advise removal of both ovaries whenever the removal of one becomes necessary because of tumor formation.

Silhol[1] asserts that this bilateral tendency is quite as well marked in innocent as it is in malignant tumors. Clark in commenting on Silhol's paper thinks that Silhol's statement is unnecessarily radical; but further on in the course of his remarks says, "Of course, if the original unilateral lesion shows the least suspicion of malignancy, the question assumes a different aspect at once, this only emphasizing, however, the great importance, especially in ovarian surgery, of a thorough knowledge of living pathology on the part of the operator." My experience is quite large, covering hundreds of cases, and I cannot recall ever having been called on to remove a cyst of the remaining ovary after an ovariotomy had been done for like trouble save in the case reported above. I am, therefore, inclined to take an even more conservative stand on this subject than does Clark. I should not advise the removal of what appeared to be a healthy ovary even if its fellow was the subject of malignancy, provided the malignant disease seemed to be confined to the ovary removed. Certainly it seems to me that this should be the rule which should guide us in operating on young women. In women near the menopause there could perhaps be little objection to removing the remaining seemingly healthy ovary.

G. W. Perkins,[2] in a paper in which he analyzes the reports of the Massachusetts General Hospital between 1870 and 1910, reaches the conclusion that "fluid in the abdomen of a child without general anasarca, provided pericarditis and cirrhosis should be excluded, should always be investigated by exploratory laparotomy."

As a result of personal experience, illustrated by the following case, I should be inclined to amend his conclusion by substituting the word "woman" for "child."

CASE 2.—Mrs. J. G. B. J. consulted me, Sept. 15, 1915, complaining that her abdomen had been filling up and that there was epigastric distress after meals which was somewhat relieved by food. She had had malaria frequently when a child. She had been married for seventeen years. One child was prematurely born at seven months. During this pregnancy she suffered severely from albuminuria and was quite dropsical. Menses were regular and normal at three to three and one-half weeks. She was subject to sick headaches. The family history was negative. The present trouble commenced with abdominal distress about two and one-half months ago; bloating was severe, and the bowels were kept open with medicine. There was some swelling of hips, thighs and ankles, but this had gone down. The patient gained in weight, but the extremities were thin. Examination revealed a very much enlarged abdomen with fluctuation, and dulness on percussion below and at the sides with the patient on her back, the line of dulness changing with a change in position of the patient. The examination of the urine, blood, heart and liver revealed no cause for the ascites. The Wassermann examination was negative.

An exploratory operation revealed the abdomen well filled with an amber colored fluid and containing a right ovarian cyst about the size of a coconut. The omentum was somewhat shortened and thickened. The opposite ovary was healthy. The cyst was torn during delivery, and a very small part of the contents escaped. Prior to the operation a bimanual examination failed to reveal any sign of this tumor, which proved on examination to be a carcinomatous cyst. It may be of interest to note that with a view to preventing the return of the ascites, I stitched the omentum into the abdominal incision throughout practically its whole length.

Up to the present writing the woman remains perfectly well. It is, of course, probable that she will

* Read before the Western Surgical Association at Des Moines, Iowa, Dec. 17, 1915.

1. Silhol: Progr. Med., 1914, ii, 247.
2. Perkins, G. W.: Internat. Abstr. Surg., July, 1914, p. 54.

have a return of her trouble. However, there was no evidence of involvement of any of the other abdominal organs. The only excuse I had for operating on this woman was that I found an ascites for which I could find no cause. The operative findings proved the wisdom of the course pursued, and strengthened me in the position that I have long held, namely, that fluid in the abdomen should lead to an exploratory operation when the presence of the fluid cannot otherwise be accounted for, and that in women this dictum should be well nigh imperative.

CASE 3.—Mrs. C. G., housewife, aged 48, came to me, July 29, 1915, complaining of a lump in the lower right abdomen. She had malarial fever three years ago. The tonsils had been removed and the nose operated on twenty-two years ago. The menses came at 13 and were regular until last August, at which time, following the removal of a small fatty tumor from the breast, the menses became irregular in that there was a decided tenderness to flow too frequently. Since Easter she had been flowing every day but never very profusely. She had been married eighteen years, and had had three children; the youngest was 15; she had had no miscarriages. The family history was negative. The patient said she did not feel sick but had lost some flesh. The bowels were constipated. The appetite was fair. Examination revealed an even, smooth, firm, movable growth apparently attached to the anterior right aspect of the uterus. I considered the case to be one of fibromyoma and advised its removal. The patient consented to have it done but wanted to go home and await a more convenient time for having the work done.

About three months later she was taken suddenly ill with pain in the lower right abdomen which required morphin to allay. There were some nausea, chilly sensations and hot flashes. I found on inquiry that she had two or three similar attacks but none of them so severe. On examination the uterine tumor seemed to be much larger than when I last saw her. The whole abdomen was tender, especially the lower two thirds. The pulse was somewhat quickened, the temperature 102. The patient was put to bed with an ice bag on the abdomen and allowed no food for three days, when the more acute symptoms subsided and the abdomen was opened, revealing a right ovarian tumor twisted clockwise three fourths of a turn on its pedicle. There was little fluid in the abdomen, slightly tinged with blood. The tumor itself was solid, seemed to be enclosed in quite a perfect capsule, and was dark colored in places owing to extravasated blood consequent on the twist. The tumor on section proved to be solid and mottled, the prevailing color being yellow with some dark red spots as a result of hemorrhage into the substance of the growth. The upper third of the tumor was darker, owing to the fact that in this area there was more extravasation of blood, because of the twist in the pedicle, than in any other parts of the tumor. The pathologist's report was adenocarcinoma with hemorrhagic infiltration.

The gross appearance of this tumor on section is so significant of malignancy that a laboratory report to the contrary would not be accepted unless it was based on a careful examination of the entire tumor; and then I should want to wait until time for further clinical manifestations had gone by, before concluding that it was benign.

Speaking of tumors generally, I should say that negative reports from the laboratory when based on a few sections should never be allowed to outweigh the evidence gained by the examination of the gross specimen plus that obtained from the clinical history. On the other hand, one frequently meets tumors which present little or no macroscopic evidence of malignancy, but which on microscopic examination show unmistakable evidence of malignancy. A case occurring in my own practice recently will serve to illustrate this point:

CASE 4.—An elderly woman presented herself with a tumor of the breast, the character of which I regarded as doubtful. The breast was removed, and on section the mass was found to be made up chiefly of two cysts the size of a chestnut, distinctly separate, movable and containing each a little slate colored grumous fluid. My doubt as to the malignancy of the tumor was so great that I felt warranted in closing the wound while waiting for the pathologist's report. About the time the wound was closed the pathologist reported that the tissue did not look good to him, whereupon the usual radical operation was done. Later on I received a further report from the pathologist in which he says, "A very interesting specimen, as the microscopic picture of malignancy is out of all proportion to the macroscopic."

It will be remembered that in this case and in Case 1 there was no fluid in the abdomen except what might be accounted for by the twist in the pedicle. These are not the only malignant tumors of the ovary that I have found without ascites. It should be remembered, therefore, that while ascites in connection with ovarian tumor is an indication of malignancy, the absence of ascites in ovarian tumors does not necessarily mean benignancy. It is well here to emphasize the point that ascites developing in connection with malignant tumor of the ovary does not mean necessarily an involvement of the peritoneum in the malignant process. Just why some of these tumors are accompanied by ascites while others of them are not remains unexplained. Not infrequently, indeed, as in Case 2, reported above, the ascites may be the only or the principal sign of trouble. My own belief, which is borne out by my experience, is that the rapidly growing tumors are the ones most likely to cause ascites.

G. Kline[3] found on microscopic examination of two malignant papillomas of the ovary immediately under the surface epithelium of the villi, and only there, that the connective tissue was saturated with serous fluid. "This was due to absorption on the part of the tumor epithelium which had taken up fluid from the lymph spaces of the abdominal cavity. This fluid may possibly have atoxic effect on tumors. If this is true, the appearance of ascites in malignant tumors is to be regarded as a protective procedure on the part of the body designed to destroy the tumor. Therefore, the subcutaneous injection of ascitic fluid may be regarded as a rational therapeutic procedure." Concerning the influence of malignant ovarian tumors on the menstrual function, cases are encountered wherein they seem to cause amenorrhea, and others wherein they seem to produce menorrhagia or metrorrhagia. These opposite effects on the menstrual function may be explained very logically, it seems to me, by the overgrowth of ovarian structure on the one hand, or its destruction on the other. However, it is found that some patients suffering from malignant ovarian tumors present a history of amenorrhea followed by menorrhagia or metrorrhagia or vice versa. The explanation for this condition is to me not apparent. In the case histories which I went over in my former paper, I found two patients who had a bloody vaginal discharge which came on years after the menopause. One of my own cases reported in that paper was that of a girl of 15 who had never menstruated though she apparently was quite mature for her age. In this patient both ovaries and uterus were involved in a large sarcomatous growth. (It is interesting to note in this connection that this patient, now more than two years and six months after the operation, is still in perfect health.)

3. Kline, G.: Internat. Abstr. Surg., July, 1914, p. 54.

In Case 1, reported above, the patient menstruated regularly for five years after the removal of the first tumor, but had no menstrual flow for two years prior to her last visit to me. In Case 2 the menses were normal. In Case 3 there was some menorrhagia. I am inclined to attribute this symptom in this case, however, to the twist in the pedicle. I think we are warranted in concluding that either amenorrhea or menorrhagia is much more common in malignant tumors of the ovary than in benign tumors of the ovary, and that both forms of irregularity are equally indicative of malignancy. In my former paper I quote Wermuth as saying that sarcoma in the young may cause premature signs of puberty, and added that I had not been able to find any other author who confirmed this statement, and that it seemed to me problematic. Since that time I have run across a report of the following case by Verebely[4]:

A girl, 6 years old, up to 5 years of age had developed normally. Since a year hemorrhages had recurred monthly and other signs of puberty had appeared. The child was about 4 inches taller than one of correspon ling age, and the breasts, which were the size of lemons, contained glandular structure. In the axillae, as well as the pubic regions, there was an abundant growth of hair. The labia were thick and pigmented and the vagina of abnormal size. Examination of the abdomen revealed a nodular tumor of the size of a child's head connected with the left side of the uterus. At the operation a very vascular ovarian sarcoma was found. The uterus was of the size of that of an 18 or 19 year old girl, the right ovary being normal.

THE CITY'S NEED OF A PSYCHOPATHIC CLINIC*

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The first psychopathic clinic established in this country was the hospital at the University of Michigan. The best practical illustrations of this type of institution which we find in this country are the Henry Phipps Clinic in Baltimore and the psychopathic Clinic in Boston; the latter, although controlled by the state, is closely affiliated with the scientific activities of Harvard University. These clinics do not present any of the features of the old asylums, and are modern hospitals in every sense of the word. Not only are they well equipped for taking care of patients, but also they are supplied with many facilities essential for carrying on research in very important fields. Fully 90 per cent. of the patients at the Phipps clinic are classed as "voluntary." The old asylum no longer exists in the modern conception of psychiatry.

As to the reasons for the establishment of psychopathic clinics, those may be mentioned first which are in effect an *argumentum ad hominem*. According to the statistics collected by Dr. Thomas W. Salmon for the National Committee on Mental Hygiene, in 1910 there were 184,000 students in colleges and universities, and in the same year there were 187,000 patients in the hospitals for the insane. The financial cost of maintaining these patients in institutions from 1904 to 1915 would call for the expenditure of $150,000,000 more than the sum expended in the building of the Panama Canal. In the state of New York at present there are about 32,000 patients in the hospitals for the insane; of this number 15,000 are aliens and 9,000 are foreign born. I think we all agree that although immigrants who have sound minds and sound bodies are both required and desired, we should not be expected to take care of the large number of feebleminded persons and the insane shipped to this country from Europe. When we reflect on the significance of the statistics just quoted and remember the startling incidence of functional nervous diseases, we find signs both tragic and alarming which indicate the necessity for radically changing our present methods in attacking these great biologic problems.

To refer to the medicolegal aspect of the problem, enormous sums of money are squandered in prosecuting individuals who are of unsound mind, when, by the introduction of a different system of examining patients, justice would be done to the individual and large sums of money would be saved for the community; and society would be more effectively protected against the overt acts of irresponsible persons.

Unfortunately, through the lack of proper facilities, psychiatry has not received from the medical profession the attention it has deserved. This important branch of medicine is practically an unknown field to the majority of physicians. Patients afflicted with psychoses come under observation, through the failure to recognize the initial stages of the disease, only at periods when the pathologic process has reached an advanced stage of development. If these conditions are allowed to continue, the menace to our civilization will become far greater than that of war. We must attack the problem from a point at which there is some prospect of success. Greater facilities must be given to physicians for studying the initial stages of mental disorders; and the public, particularly parents and teachers, should be trained to recognize the danger signals in order that intelligent assistance may be summoned before disaster is imminent.

My experience at Princeton University has convinced me that teachers should be trained to attack the problems of education from the broad biologic and not the scholastic point of view. Through the courtesy of my colleague, Dr. Joseph C. Raycroft, head of the Department of Hygiene at Princeton University, I have had the privilege of talking to students who have had difficulties in adjusting their lives satisfactorily. In a relatively small university community the number of students who came voluntarily to seek advice was a large one. You will pardon me if I emphasize the importance of my experience, as I believe that it is a unique one, and it has brought home to me as nothing else could do the necessity for the practical realization of the fact that life is a process of adjustment, and education should be a process of assisting human beings to the successful adaptation of their activities.

Many of us are accustomed to use the phrase "life is a process of adjustment" without appreciating its applicability to the activities taking place in the higher levels, such as consciousness. We do not need to be reminded of the familiar phenomena of adjustments in the reflex and automatic levels, but many medical men fail to appreciate the fact that all our conscious activities represent mechanisms of adjustment. When I address an audience I make an effort to adjust my activities to the environment, by maintaining my bal-

4. Verebely: Sajous's Analytic Cyclopedia of Practical Medicine, 1915, vii, 256.

* Read before the Physician's Club, Chicago, Nov. 23, 1915.

ance, mental as well as physical, by modulating my voice and by trying to present the subject under discussion so as to stimulate and maintain interest without arousing animosity. All these responses represent biologic reactions, and the important thing for us to remember is that if we restrict our attention merely to the study of the conscious phenomena, we shall probably not succeed in gaining a comprehensive view of the various mechanisms concerned. The reactions must be studied as units expressed either in thought or behavior, in consciousness as well as in automatic or reflex movements. If we desire to know more about the machine we must also be familiar with the functions of different internal organs, analyze the relationships existing between the parts, and finally study the integration of the different functions as expressed in behavior.

In the study of the human machine it was quite natural that the attention of physicians should be first attracted to the relatively simple functions of the different internal organs, while less attention was paid to the complicated synthesized activities expressed in thought, word and speech. Unfortunately the psychologist embarrassed by his metaphysical traditions studied the conscious processes as if they were not related directly to the other reactions of the organisms. From the study of the abnormal much has been learned that is useful in interpreting normal functions. This principle is true for all the different levels of activity, whether they are reflex, automatic or conscious. Many of the interesting cases of "forgetting" which we observe illustrate the intimate dependence of the higher on the lower levels. A student recently complained to me that he was unable to remember certain important formulas, and this defect of memory had become so serious as to suggest to his mind the advisability of giving up his university work. In conversation it soon became apparent that this young man was trying hard to repress the memory of certain unpleasant incidents, and although he had been partially successful in accomplishing this object, he had also established a series of mechanisms which threatened to interfere seriously with his intellectual processes.

There are many other experiences gained in the study of abnormal phenomena which may be utilized in assisting us to solve some of the great problems presented by civilization. If physicians were able to gather more extensive information than that yet acquired in regard to the nature and genesis of the mechanisms concerned in the formation of prejudice, hatred and envy, the progress of civilization would be accelerated. From the study of the paranoiac as well as other unfortunate individuals who are subject to fixed ideas, it is obvious that the education of the emotions is of more fundamental importance than training the intellect. The absence of prejudice and the capacity of our minds to perceive and accept the truth depends more on the regulation of feeling than of thinking. The dangerous conflicts which are precipitated are those arising from the incoordination of feeling and thinking. We are all familiar with "the shut-in" type of individual who tries to conceal all evidences of the dissociation existing between his emotional and intellectual life. In cases of dementia praecox we have an excellent illustration of the accumulated power of impulses which often destroy all the defenses and drive the individual to the performance of insane acts. Patients of this type also illustrate in a striking manner a principle which should be recognized by all those who call themselves educators, namely, the necessity of teaching young people to face the world of realities and not adjusting their activities temporarily to an imaginary world until driven by fate to face the common facts of existence.

There should be better opportunities offered to physicians than exist at present for applying many of the facts discovered by experiment in regard to the nature of the mechanisms conditioning the emotional life to assist in the interpretation of the behavior of human beings. In this connection I have only to recall to your mind the important investigations carried on by Prof. W. B. Cannon of Harvard and his pupils in regard to the relation of the functions of the suprarenals and other organs to such conditions as hope and fear. In my own experiments made on the vertebrate embryo I have been impressed by the necessity of studying the nervous reactions in relation to the development of functions in such organs as the thyroid, thymus and suprarenals, as it is evident that when the organism first begins to respond to incident stimuli these organs have received a nerve supply and may be said to form an integral part of the nervous circuit.

The establishment of a psychiatric clinic not only is evidence of increasing interest in the study of psychiatry, but also marks an intelligent desire to study human beings. The present crisis in civilization should not make us pessimists, as it was not until Pinel in 1798 published his "Nosographie philosophie" that there was any sign given indicating man's interest in the study of his own activities.

Pinel, as you know, not only was responsible for the introduction of more humane methods in the care of the insane, but he also opened up a new field of investigation by showing that one of the chief avenues of approach to the study of normal human activities was by analyzing the mechanisms of the abnormal mind. He suggested many problems, the solution of which would have an intimate bearing, not only on the nature and causes of alienation, but also on questions of fundamental importance to the educator and the student of social phenomena.

I need not recall the importance of offering better facilities than those now existing for training physicians in psychiatry; but there is one phase of a great problem which has not received the attention it deserves, namely, the important duty the modern alienist has to perform in assisting in the reorganization of our entire educational system. We have seen how important it is for our civilization that the public should be made to appreciate the significance of the phrase, "Life is a process of adjustment," and that eduction is not a method for acquiring information but a means for securing the successful adaptation of an individual to a suitable environment. The old scholastic ideals of education are beginning to disappear, and in their place, thanks largely to the work of the modern alienist, a new system is developing which takes into account the biologic needs of human beings. If the government "of the people, by the people, for the people" is to be successful, it is essential that the activities of the individual citizens, and the laws controlling the relationship existing between these social units, should be recognized, and society assisted to develop along the lines which are in accordance with the principles governing human life.

It will be unfortunate if we do not take to heart one of the great lessons taught by the present European conflict. Is not civilization paying today for man's

failure to take an intelligent interest in the study of his own activities? We know that the most serious conflicts which arise in the life of any person are not directly due to disorders in the field of consciousness, and this is equally true for the individual and the nation. Whenever human beings or nations create an imaginary world in which they attempt to live until some disaster necessitates a sudden readjustment of the fictitious environment to meet the conditions of actual facts, a crisis of major importance is precipitated. From the dawn of history to the present time the thoughts, words and deeds of an imaginary human race have been written for us by philosophers, poets and historians. Conceptions of religion and patriotism, ideals of social justice, and aspirations for the future have been associated in our minds with the imaginary emotional reactions of an idealized race of beings, and now we have been rudely awakened to the necessity of studying men as they live, move and have their being.

REMOVAL OF TONSILS AND ADENOIDS IN DIPHTHERIA CARRIERS *

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The importance of promptly ridding the diphtheria carrier of diphtheria bacilli needs no emphasis. Not only may the carrier spread diphtheria, but in children the loss of school days and the difficulties of quarantine are serious matters. In hospitals for infectious diseases, the presence of otherwise healthy patients for a prolonged period, with occupation of beds needed for those actually sick, and with the constant liability to cross infection, is, to say the least, burdensome. In this hospital it has been found, as will be reported soon in detail, that dry and finely powdered kaolin properly applied materially shortens the necessary stay of patients in the hospital. In the course of observation, however, several instances have been met in which the local application of kaolin[1] seemed to be without any effect on the bacilli. In view of the prompt disappearance of the bacilli in these cases after tonsillectomy and removal of adenoids, it seemed advisable to make a brief report of the results.

CASE 1.—Boy, aged 13, onset June 4, admitted June 8; 20,000 units antitoxin, a case of moderately severe pharyngeal diphtheria. Kaolin was applied daily from June 14 to July 30 but without effect. July 31, the tonsils and a small amount of adenoid tissue were removed. The tonsils were large and irregular, with large crypts. The cultures became negative immediately following the operation, after having been positive for fifty-seven days before.

CASE 2.—Girl, aged 14, onset September 6, admitted September 9; 40,000 units antitoxin, a case of severe pharyngeal diphtheria. The bacilli persisted in spite of the use of kaolin until October 21, and then the tonsils, which were large and with deep crypts, were removed. The cultures became immediately negative.

CASE 3.—Girl, aged 8½ years, onset October 20, admitted October 26; 20,000 units antitoxin, a severe case of pharyngeal diphtheria. The bacilli persisted to November 27, and then the tonsils, which were large and ragged, and a moderate amount of adenoid tissue were removed. The cultures became promptly negative for diphtheria bacilli.

CASE 4.—Woman, aged 21, onset November 15, admitted November 17; 25,000 units antitoxin, a case of moderately severe pharyngeal diphtheria. The cultures from the throat and nose continuing positive, the tonsils were removed, December 8, the right being large, irregular, with many crypts; the left small and submerged. The cultures were positive for two days after the operation, and thereafter negative.

CASE 5.—Girl, aged 11 years, onset November 7, admitted November 9; 20,000 units antitoxin, a moderately severe case of pharyngeal diphtheria. The cultures from the nose being positive, the tonsils, which were moderately enlarged and irregular, with numerous crypts, were removed, December 8, whereupon the cultures became negative.

CASE 6.—Boy, aged 8½ years, admitted as a carrier without symptoms of intoxication and treated with kaolin from November 7 to December 13; then the moderately enlarged and irregular tonsils were removed (Dr. E. McGinnis), the cultures immediately becoming negative.

In none of these patients did the operation have any different general effects than it has ordinarily. In all of the patients the Schick test gave negative results just before the operation. Six successive negative cultures were required before the patients were discharged.

The results obtained in this series indicate clearly that in persistent carriers it may be necessary to remove the tonsils and adenoid tissue if it is desired to terminate promptly the carrier condition.

The bacteriologic examination should be made with care, as it is well known that applications of medicinal agents may destroy the bacilli on the surface while leaving unaffected those in the crypts of the tonsils and the folds of the adenoid tissue.

As to the time the operation should be performed, it is perhaps advisable to wait from two to three weeks after the clinical recovery of the patient. In the case of the chronic carrier, no time limit is of course necessary.

* From the Durand Hospital of the Memorial Institute for Infectious Diseases.

1. Hektoen, L., and Rappaport, B.: The Use of Kaolin to Remove Bacteria from the Throat and Nose, THE JOURNAL A. M. A., June 12, 1915, p. 1985.

CONGENITAL ATRESIA OF THE ESOPHAGUS

REPORT OF A CASE *

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Owing to the comparative infrequency of this condition, the following case is considered of sufficient interest to report:

History.—Soon after the birth of a full term girl, born in normal labor with a birth weight of 7 pounds, it was noticed that mucus ran from the baby's nose and mouth, and that apparently she could not swallow water given her and regurgitation through the month and nose occurred, associated with severe coughing and an extreme blueness of the skin. During these three days before the baby came under our care, there were apparently numerous meconium movements.

Physical Examination.—The baby was rather poorly nourished but fairly well developed. The skin was dry from the loss of water but not yet tough. There was a slight general cyanosis, especially of the finger tips. There was a more or less constant discharge of mucus from the nose and mouth, both stringy and containing air. There was a unilateral harelip and a complete cleft palate of the same side.

* From the Children's Orthopedic Hospital.
* Read before the King County Medical Society, October, 1915.

The separation involved the alveolar process and the hard and soft palates.

The heart, lungs and abdomen were apparently normal. A small mouth feeding of water was immediately regurgitated, bringing about a severe attack of coughing with cyanosis.

On passing a No. 14 (F) Hess duodenal catheter, definite obstruction was encountered 11.5 cm. from the mouth. At this age the normal distance from the mouth to the cardiac end of the stomach is about 17 cm.

The diagnosis of congenital obstruction of the esophagus was now definitely established.

Operation.—A gastrostomy was performed on the fourth day of life in order to feed the baby artificially. A small sized rubber catheter was fastened into the stomach and brought out through the left rectus incision. Shortly after the operation it was noted that when more than a teaspoonful was run into the stomach, an attack of coughing and strangling would come on, as had previously been produced by attempts at feeding by mouth. After even larger stomach feedings, milk was seen to run out of the mouth.

The infant became progressively weaker and died on the seventh day.

Necropsy.—The upper end of the esophagus ended in a blind pouch 3.3 cm. below the epiglottis. With gentle traction this pouch could be elongated to 4 cm. The diameter was uniformly about 1 cm. The lower portion of the esophagus extended definitely from the bifurcation of the trachea to the cardiac end of the stomach. This portion was about 3.5 cm. long, and at the bifurcation communicated directly with the trachea. Between the upper and lower portions there was only a fibrous band.

There are several different types of congenital obstruction of the esophagus. This is the common or "inosculating" type, in which the upper portion ends blindly in a dilated pouch and the lower portion passes from the stomach into the trachea. The frequency of this type suggests a uniform embryonic origin. It is not uncommon, as in this case, to find associated defects in development, such as harelip and cleft palate. In view of the difficulty we encountered in feeding through the gastrostomy opening, as indicated by coughing up of the milk placed in the stomach, a jejunostomy would seem better suited for this condition.

The outlook at best is hopeless. Operative procedure only postpones the fatal termination, since there is little likelihood that a plastic operation on the middle of the esophagus would be possible on a baby of this age.

Milk of Immunized Cows in Tuberculosis.—A committee of New York physicians including Dr. Haven Emerson, the commissioner of health, in 1915 made an investigation of the suggestion of Rosenberg that cows might be immunized against tuberculosis and that their milk would benefit persons with tuberculosis. Rosenberg suggested that the milk of cows treated with tuberculin contained antibodies which would be absorbed from the intestines of persons taking such milk. The two questions, the absorption of antibodies from the intestine and the production of antibodies by the vaccination of cattle with tuberculin, were studied by the committee. They found that antibodies were readily absorbed from the intestine during the first few weeks after birth, but they did not consider it proved that they would be absorbed after the first two or three months of life. The production of antibodies was attempted by the use of typhoid bacilli in a cow. A cow was immunized with this organism and after a large amount of agglutinins was developed a calf several months old was fed on the milk of the cow. The blood of the calf showed a slight power to agglutinate typhoid bacilli. The committee concluded from their experiments that up to the present we have no evidence that the milk from cattle immunized against tuberculosis, as suggested by Rosenberg, is of any advantage to those having tuberculosis.

THE FUNCTION OF THE THYROID-PARATHYROID APPARATUS*

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During the past eight years Plummer has been making an extended clinical study of thyroid disturbances in several thousand cases of hyperplastic and colloid goiters, and has gradually formulated the following basic hypotheses:

1. In thyroid disturbances the effects are due to a change in the rate of a normal function.
2. The stimulating effect of increased thyroid activity is not felt in any particular set of organs or tissues alone, but the stimulus is active throughout the body.
3. The stimulating action is intracellular.

I wish at this time to draw attention to these fundamental aspects of thyroid disturbances, since they were formulated prior to the work reported herein, and any theory of the function of the thyroid should at least fulfil the conditions Plummer outlines.

Several months ago I reported the isolation from the thyroid of a crystalline substance containing 60 per cent. of iodin and possessing the physiologic activity attributed to the gland. My attempts to repeat the preparation of this substance were unsuccessful for fourteen months. A chance observation furnished the clue that carbon dioxid is a factor of great importance in the purification. This fact explained the failures of many months, led to the perfection of the method for the isolation of the substance, and threw much light on the structural formula of the compound.

The method of separation and final purification of the crystals strongly suggests that the bond linking the iodin compound to the protein constituents is through an amino group, and that the purification is effected by the entrance into the iodin compound of carbon dioxid in place of the amino group.

At the time of the first isolation of the crystals, the solubility of the substance in sodium hydroxid and its insolubility in sodium carbonate suggested that we were dealing with phenol groups and not carboxyl. I, therefore, suggested as the possible formula for the substance di-iodo-dihydroxy-indol. The more recent work on the structural formula makes it appear to be carbonic acid in which one of the hydrogens is replaced by di-iodo-indol.

The chemical behavior of the compound throughout the course of its purification corroborates this hypothetic structure, but sufficient work has not been done to make it certain. If further work confirms present indications that there is present a CO_2H structure, and that this may easily be replaced with the amino (NH_2) group, it will strengthen the following hypothesis for the physiologic activity of the substance.

Under proper conditions, the interaction of the amino group of an amino acid and the CO_2H group of the iodin compound results in a transfer of the carboxyl (CO_2H) group from the iodin compound to the amino acid, and of the amino group from the amino acid to the iodin compound. In the presence of carbon dioxid there is another exchange between the amino group now attached to the iodin compound and carbon dioxid, the result being the reformation of the iodin compound with the carboxyl structure and the

* From the Mayo Clinic.

removal of the amino group in combination with carbon dioxid. The iodin compound has entered into combination, allowed the reaction to take place, and has been regenerated in its original form without alteration or destruction.

The amino group removed from the iodin compound and joined to carbon dioxid is a by-product of the reaction, which in the presence of water, of course, exists as ammonium carbonate. Without entering into the details of this reaction, the net result is the deamination of the amino acid.

When protein is catabolized in the body, nitrogen is not excreted as ammonium carbonate, but appears chiefly in the form of urea. Some mechanism must exist for the conversion of the ammonium carbonate resulting from deamination into urea. It is known that after parathyroidectomy the ammonium content of the urine is increased, and it has been suggested that the tetany following parathyroidectomy is due to this increase in ammonia. The acid radical to which the ammonia is attached has not been determined, but it has been shown that soluble salts of barium, strontium, calcium and magnesium relieve the tetany following parathyroidectomy, and it has also been shown recently that the tetany is controlled by the injection of acids.[1] The only salt of ammonia which can react with all five of these reagents forming a nontoxic compound is ammonium carbonate. From the results of previous investigators, it seems probable that ammonium carbonate is responsible for the tetany following parathyroidectomy, and *it is here suggested that the function of the parathyroid is to convert ammonium carbonate into urea.* The production of urea has not been shown to be confined to any one special organ, and it has been pointed out that in all probability it is produced throughout the entire body.[2] If the thyroid secretion is the catalyzer controlling the rate of deamination of amino acids, and the parathyroid furnishes the mechanism for the conversion of the so formed ammonium carbonate into urea, then urea (and ammonia) output by the body is within certain limits a measure of thyroid-parathyroid activity. It is apparent that in a sphere of reaction wherein proper conditions exist for the deamination of amino acids, all other conditions being constant, the speed of the exchange of the amino group for carbon dioxid is directly controlled by the amount of the iodin compound present, and that in the entire absence of this substance, although amino acids are present, no action can take place.

The above suggested principles furnish a means for the study of the factors controlling the activity and the manifestations of animal life. No complete hypothesis can be formulated at this time, when many other factors remain so obscure, but the process occurring in the normal animal may be outlined as follows: The body proteins are decomposed to a slight extent into amino acids. These, under proper conditions and in the presence of the iodin compound, are deaminized, and the products of this reaction are then burned either directly into carbon dioxid and water, or are used for the formation of carbohydrates, fats, etc. If, for any cause, an increase in the amount of the iodin compound in the cell is brought about, the speed at which this reaction takes place is increased, the equilibrium between proteins and amino acids is disturbed, more amino acids pass into the reaction, and ultimately, the proteins unless replenished, are exhausted. At the same time, the products of the reaction, deaminized acids, are formed in increased amount. This results in an increased speed of the processes of oxidation and the formation of carbohydrates and fats. The delicately balanced relations between proteins, carbohydrates, fats and oxidation are, therefore, affected at a vital point since the equilibrium of the entire body is changed and the speed of reaction of all body functions is increased.

The presence of the deaminizing catalyzer does not affect the mechanism of the formation of body proteins from foreign proteins, or the decomposition of body proteins into amino acids. There is no direct change in the mechanism entering into the metabolism of carbohydrate and fat formation and oxidation. The only thing which is influenced is the rate at which deamination occurs. If this hypothesis be correct, *we may conclude that the function of the thyroid is to furnish a catalyzer which regulates the rate of deamination.*

Woodyatt, from a study of chemical dissociation and the equilibrium existing in the body, has already suggested that "the thyroid may be concerned with the dissociation of amino acids or polypeptids derived from the breakdown of protein." The function of the gland presented in this paper is in entire accord with this hypothesis, and furthermore shows at just what point this influence is exerted.

Having outlined the function of the thyroid-parathyroid apparatus under normal conditions, we may follow the effects of an excessive secretion. The presence in the cells of an increase of the iodin compound produces a condition precisely similar to that found during violent exercise. It is simply an increased rate of the normal functions of the body. An increase of from 200 to 300 per cent. in the rate of metabolism has been found in cases of exophthalmic goiter. This is going on at a temperature maintained but slightly above normal, and it is apparent that the usual controlling mechanism for temperature regulation is not broken down. However, at death from exophthalmic goiter, a crisis is frequently seen in which the controlling mechanism does break down, the temperature reaches 106 or more, and metabolism apparently runs wild. Stated another way, we are normally living at a rate of from one-third to one-half our possible capacity. Some of the factors other than the iodin compound controlling the rate of protein metabolism are probably the rates at which proteins are converted into amino acids and the rates of removal of the products of deamination.

The other extreme of cell activity is found in myxedema. Here metabolism is at a minimum. It is probable that the amino acids and proper conditions for their deamination are present, but the catalyzer or vehicle by which this process is brought about is present in too small an amount to supply the normal demands. There is no more striking result in therapeutics than the change produced in a patient suffering from myxedema by thyroid administration. The entire absence of the iodin compound from cells would mean a metabolism at zero rate, in other words — death.

The catalytic activity of the thyroid secretion is probably a function carried on within the cells of the body. The life and activity of every individual cell is depen-

1. Wilson, D. Wright; Stearns, Thornton, and Janney, Jr., J. H.: The Effect of Acid Administration on Parathyroid Tetany, Jour. Biol. Chem., 1915, xxi, 169.

2. Folin, Otto, and Denis, W.: Protein Metabolism from the Standpoint of Blood and Tissue Analysis, Jour. Biol. Chem., 1912, xii, 141.

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dent on the amount of the iodin compound in it. It is obvious that during different periods of rest and activity the organs require varying amounts of the iodin compound. We can, therefore, assume that the function of the thyroid is not only to elaborate this substance, but also to supply the cells of the body with the amount necessary to meet the momentary demands of each cell. But after cell activity has been heightened by an increase of the amount of the iodin compound present, there must be some mechanism for the subsequent removal of some of the catalyzer from the cells and for carrying it back to the thyroid, there to be held until again demanded. The vehicle for carrying the iodin compound from the gland is probably the colloid found in the thyroid secretion. It is suggested that the balance between free amino acids and colloid may be the mechanism governing the supply and demand for the catalytic substance. Previous investigators have produced hyperplasia in lower animals and fish by feeding a protein diet.[3] The presence in the blood of abnormal amounts of amino acids may be a stimulus to the activity of the thyroid.

The clinical picture seen in the group of cases pointed out by Plummer as toxic nonexophthalmic resembles the condition which results from the overstimulation of the gland as produced by Cannon, and from thyroid feeding. This clinical group probably represents the maximum effect which it is possible to produce by direct stimulation of the glands through the nervous control. In these cases it is probable that the mechanism converting proteins into amino acids is not disturbed. There simply is an increased rate of deamination, resulting in what may be called a "pull" on the proteins to supply more amino acids. In contrast to this is the greater rate of metabolism seen in exophthalmic goiter. The stimulus in the first group of cases may have been direct on the thyroid; the stimulus in the exophthalmic group of cases may come from an increase of amino acids due to a disturbance in the mechanism converting proteins into amino acids. This would result in what may be called a "pull" on the thyroid for an increased activity, driving it, as Plummer has suggested, through the hypertrophic and colloid stages into the hyperplastic condition. The latter condition, once established, is a vicious circle.

If the foregoing hypothesis of the function of the thyroid-parathyroid apparatus proves tenable, its application to the explanation of biologic phenomenon is apparent, but further elaboration of the hypothesis will not be attempted until after a quantitative study of the factors involved.

3. Bensley, R. R.: The Influence of Diet and Iodides on the Hyperplasia of the Thyroid Gland of Opossums in Captivity, Am. Jour. Anat., 1916, xix, 57. Marine, David, and Lenhart, C. H.: Further Observations and Experiments on the So-Called Thyroid Carcinoma of the Brook Trout (Salvelinus Fontinalis) and its Relation to Endemic Goiter, Jour. Exper. Med., 1911, xiii, 455.

Professional Dishonesty.—Conventional dishonesty of professional dealing which more than anything else is consequent upon a disposition to follow the line of least resistance, is of far greater significance and gravity. This is the field in which the eminently respectable, highly successful, intensely popular physician can find his fullest scope without being personally challenged either by his neighbor or by himself. The results of his deviating are remote and indirect and largely detached from his personal relations. In the aggregate, however, they constitute the factor of instability in the structure of professional reliability and value.—Henry B. Favill, *Pennsylvania Med. Jour.*, November, 1915.

STRANGULATED FALLOPIAN TUBE, OVARY AND INTESTINE IN AN INFANT

GEORGE ABELIO, M.D.
CHICAGO

Inguinal hernias, the contents of which consist of the fallopian tube or ovary, or both, are not common. The association of the internal genitalia with intestine in a hernia in a strangulated condition, if not a surgical rarity, is an interesting condition. Hence, the report of this case.

An excellent summary of the entire English, French and German literature on the subject of ovarian, tubal and tubo-ovarian hernias, covering the period of 1890 to 1910, is given by Heineck.[1] I have attempted to collect instances reported since 1910, up to date. Simple inguinal hernias of the fallopian tube are recorded by Tourneux[2] and Giuliano,[3] while Cessare,[4] Humbert[5] and Rabinovitz[6] report inguinal hernias, the contents of which were the ovaries. The latter's case was of unusual interest, occurring in a woman of 35, being a double ovarian hernia associated with total absence of uterus and a rudimentary vagina. Petit de la Villéon[7] records ovarian hernias in two infants. A strangulated ovarian hernia,[8] torsion of an ovarian pedicle[9] in an inguinal hernia, strangulation of a fallopian tube[10] in a hernia, a suppurating inguinal ovarian hernia,[11] and an ovarian hernia associated with a strangulated transverse colon,[12] these hernias with involvement of the internal genitalia, are on record.

My own case, referred for operation by my father, occurred in a girl aged 11 months. Breast-fed, and with no febrile or diarrheal disturbances of any sort, she was perfectly healthy until three months ago when a mass in the right inguinal region made itself manifest, the appearance of which was associated with apparently severe abdominal pain and vomiting. Prior to this, no such mass had been noticed by the parents. A local doctor accomplished reduction readily, with complete subsidence of the symptoms. She had had four similar attacks since, all consisting of the rapid appearance of an inguinal mass associated with pain and vomiting. Taxis was as successful in three of these attacks as in the first instance. About four weeks ago the baby was brought to Dr. J. M. Abelio with this history:

A mass appeared in the right inguinal region forty hours previously; the baby began to cry as if in severe pain; vomiting set in, and had continued at times since. Unsuccessful attempts at reduction by another physician had already been made. She had had no bowel movement for about forty-eight hours. Examination revealed a somewhat distended abdomen, not by any means tense, and a right inguinal mass, about 5 cm. in diameter and elevated above the normal skin level to the extent of about 2 cm. This mass was exquisitely tender and very tense. Immediate operation was advised, and, after a delay of about six hours, because of indecision on the part of the parents, performed.

An oblique incision above the mass displayed a well-formed, spherical, tense dark-colored peritoneal sac bulging directly forward through the external ring. The sac was carefully

1. Heineck: Surg., Gynec. and Obst., August, 1912.
2. Tourneux: Rev. mens. de gynec., d'obstét. et de pédiat., viii, 484.
3. Giuliano, E.: Gazz. d. osp., 1912, xxxiii, 1475.
4. Cessare: Ressyna dispediat., Parma, 1911, ii.
5. Humbert: Union Med. du Nord-est. Rheims, 1914, xxxvii.
6. Rabinovitz: Med. Rec., New York, 1915, p. 586.
7. Petit de la Villéon, E.: Jour. de méd. de Bordeaux, 1913, xliii, 644.
8. Domenichini, G.: Bull. de Soc. med. de Parma, 1913, Series 2, vi, 60.
9. Veau: Arch. de med. d'Ing., 1911, p. 36.
10. Caneva: Osp. maggiore, 1913, Series 2, i, 31.
11. Waddelow, J. J.: Lancet, London, 1911, ii, 760.
12. Dervaux: Bull. et mém. Soc. de chir. de Paris, 1911, N. S., xxxvii, 108.

nicked and the opening enlarged with scissors blunted on the end. The contents then came into view. These consisted of a large almond-sized mass, readily recognized as the ovary, to the postero-external aspect of which was a tiny fallopian tube. Posterior to both was a knuckle of dark-colored small intestine. Very slight traction on the intestine was made, a Kocher director inserted between it and neck of the sac and the latter nicked enough to enable reduction of the herniated viscera. Several minutes after the release of the constricting neck, the ovary had reduced about 100 per cent. in size, and the intestine became a very deep red. Satisfied that there was a proper return of circulation to the involved viscera, I returned them very carefully to the abdominal cavity. The opening in the peritoneum was closed, muscle and fascia approximated to Poupart's ligament, and the lower leaf of the external oblique imbricated over this line of sutures. The skin was closed with silkworm-gut, and the whole covered with a gutta-percha collodion dressing (the gutta-percha edges being sealed to the skin with ether, a layer of gauze placed over this and held there by collodion generously applied), a very efficient protective dressing. Three hours after the operation, a copious, very foul smelling bowel movement resulted. The convalescence was uneventful.

25 East Washington Street.

Therapeutics

BACKACHE

(*Concluded from page 741*)

SACRO-ILIAC PAIN

Lumbago, lumbosacral nerve pains, uterine displacements, coccygodynia or coccyalgia, hemorrhoids and bone disease or bone tumors are not now a sufficient diagnosis to account for all the kinds of backache of the lower part of the spine. Orthopedists have long shown that backaches may come from weakness or broken arches of the feet, as suggested above, throwing the whole center of gravity so far off as to cause pain in the muscles of the back in the effort of these muscles to keep the body in proper equilibrium. They are now teaching the practicing physician, the gynecologist and the surgeon that many backaches are due to a relaxation of the sacro-iliac joints, to inflammation in these joints, and sometimes to degeneration of the bones of these joints. This kind of backache occurs most frequently in women.

It was long believed that the sacro-iliac joint was not intended to have much motion. It has been learned, however, that it has a very valuable and necessary function, and when disabled causes symptoms. These joints may suffer from arthritis due to an infection, rheumatic or otherwise. They may be disturbed by faulty posture or position, as suggested above. They often become more or less permanently injured, owing to a relaxation of the ligaments of the joint, even to long continued lying in bed, whether from a long illness, as typhoid fever, or after surgical operations, or from other illness which means much or continued lying on the back. Consequently, any patient who must be long recumbent must be frequently turned, if possible, and the bed must be flat and must not be allowed to become sunken in the center. Many an otherwise well person has iliosacral and lumbosacral backaches simply because his bed is too soft and the springs have relaxed, and he lies all night as one would in a hammock. Many an instance of this kind of backache will be entirely cured by a stiffening of the springs, or a change of bed.

These joints may be strained by a sudden twist or turn, or by direct injury in this region. Many a lumbosacral backache dates from an operation table, when the patient was long in an obstetric or lithotomy position. Great care should always be exercised during these prolonged operations that the legs are occasionally moved and not allowed to hang in a position that is of great disadvantage to the iliosacral joint. Some orthopedists believe that these joints may be injured by lifting a heavy object; others do not believe that they are thus injured. Lovett[1] does not believe that a strain of this joint is thus caused, but considers it always an attitudinal strain due to faulty positions and fatigue. Patients with this kind of backache often hold themselves more or less rigid while walking, thus tiring other muscles. They dislike to jar themselves, and the pain may radiate down the gluteal muscles into the thighs, or there often seems to be an associated sciatic nerve pain. In fact, many a case of sciatica is not benefited until a defective sacro-iliac joint is improved.

A lumbago or pain in the lumbar muscles, that is, a myalgia of the lumbar muscles, will respond readily, as a rule, to a diet without meat or a diet limited to milk and cereals, with plenty of water, and with the administration of alkalies, such as potassium citrate, 2 gm., in wintergreen water, administered three or four times in twenty-four hours, and to massage and local heat. But if the pain is due to a weakening of the sacro-iliac joint, none of these treatments will be curative.

The only treatment which is of any avail in sacro-iliac relaxations or weakened joints is afforded by more or less immobilization by strapping over the sacro-iliac region, unless the patient rests in bed on a stiff mattress. The straps of adhesive plaster may go all the way round the body at the level of the upper part of the ilium, and may cross each other over the sacrum; or they may be run diagonally from just below the brim of the pelvis around and across the back. Each strap should overlap the other from a third to half of its width to cause good firm support. When diagonal straps are used, a firm supporting strap of adhesive should be put all the way round the pelvis.

The straps being of benefit to a person, later a proper kind of corset may be made, in the case of a woman, or a proper kind of supporting belt in the case of a man, for permanent use.

LUMBAGO

While most of these backaches of the lower part of the spine were long attributed to lumbago or myalgia of the lumbar muscles, we are now learning that only a small proportion of backaches in this region are due to this cause, and Lovett, in a study of eighty-three cases of backache, found only one due to lumbago. As just suggested in discussing the diagnosis of lumbago from sacro-iliac joint pain, the treatment there outlined for lumbago is almost invariably successful. Hot water applications are also of value, and especially hot sitz baths followed by deep massage. If the patient is rheumatic and has had joint pains, the salicylates may be given. Sometimes faradic electricity is of value in lumbago. Temporary strapping of the back up and down the spine, or in such a way as to relieve the affected muscles, always causes comfort, hastens recov-

1. Lovett, R. W.: The Causes and Treatment of Chronic Backache, THE JOURNAL A. M. A., May 23, 1914, p. 1615.

ery, and allows the individual to get about sooner than when strapping is not done.

BACKACHE DUE TO PELVIC CONDITIONS

Women with disorders of the pelvic organs frequently complain of backache. It is often associated with painful menstruation, and is undoubtedly due to either the increased congestion in the pelvis or to an obstruction to the passage of the blood at the cervix uteri. Retrodisplacement may produce backache in the sacral region, but the amount of displacement is no index to the amount of pain they will suffer. Backache can be absent in marked retroversion, but is likely to be present if there are many adhesions. Cervical erosions and lacerations, inflammation of the uterus and ovaries, and tumors of the uterus and ovaries may all be causes of lumbosacral, but principally sacral backache.

It is hardly necessary to declare that no lumbosacral backache in a woman should be treated without a careful pelvic examination having been made and without the knowledge that a pelvic disturbance may be the cause of the backache. A correction of these conditions will be the only means of relieving such a backache. However, it should not be forgotten that a patient may have other causes of lumbosacral backache, even if a pelvic disturbance is present. Consequently, the same physical examination of the feet, legs and back should be made as though no pelvic disturbance were present.

BACKACHE DUE TO ABDOMINAL CONDITIONS

Pathologic conditions of the kidney may cause pain to be referred to the lumbar region. The most frequent kidney causes are calculi, pyonephrosis, perinephritic abscess, new growths and floating kidney. While many floating kidneys cause no symptoms, sometimes a kidney that is only slightly loose may cause distinct symptoms and pain referred to the back. Examinations of the urine, especially when obtained by catheterization of the ureters, will reveal the presence or absence of pus, and generally of a calculus, and roentgenoscopy will almost always clear up the calculus question. If a calculus is present in the pelvis of the kidney causing backache, pain will also be generally referred down in the direction of the ureter to the bladder, and in the male to the testicle, which immediately shows that the backache is purely secondary to the other condition. A constant study of all the urine passed for a few days, and observation of the temperature, will reveal the presence of pus in the kidney. The treatment of these conditions is, of course, surgical.

A floating kidney causing pain may be kept in position by a proper abdominal belt. If it still causes pain and symptoms, it should be fixed by operation.

A pendent or very obese abdomen may cause the patient so to change his normal posture as to produce backache. Abdominal supports will help in such a case. Ptosed abdominal organs may cause such dragging on ligaments as to give backache; again, abdominal bandages and proper supporting corsets will relieve the strain on the back muscles, allowing the patient to assume a more normal posture while walking and standing.

Impacted feces in the colon, abdominal and rectal growths, and syphilis of the spine are all occasionally causes of backache, and of course, except in syphilis, treatment of the back is futile.

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SATURDAY, MARCH 11, 1916

INFECTIOUS (?) CANCERS IN ANIMALS

New growths, to all intents and purposes the equivalent of malignant tumors in man, occur in many animals. There are points in connection with some growths of this kind in animals which suggest that they may be of infectious nature. By way of illustration may be mentioned the remarkable chicken sarcoma studied by Peyton Rous, apparently perfectly sterile and cell-free filtrates of the tissue of which, when injected into chickens, produce sarcomatous growths identical with the original growth. What could be more reasonable than to conclude that this growth is caused by a filterable virus, and that it is an infectious growth? The "virus" in question, however, does not correspond to other living viruses in all characteristics; it has not been possible to secure any evidence that it multiplies independently of the tumor cells, and there are no indications that the growths from which it is obtained ever spread by contact. The nature of the neoplastic agent in these filtrates is not understood.

Then there are tumors with which are associated closely certain large parasites. Thus Borrel demonstrated cestodes and nematodes in adenocarcinoma of mice, and in the adjoining tissues, while Fibiger observed the development of carcinoma in the stomach and intestines of rats which were fed with cockroaches containing the ova of a nematode obtained from a tumor in the stomach of a rat. In this class might well be placed also the papillomatous growths in the bladder and rectum of man that develop in association with the eggs of *Bilharzia haematobia*. These are highly interesting relations, but of course they do not justify the assertion that all the tumors in question are directly and truly of infectious origin, and far less that cancers in general are of parasitic nature.

Still another example of what look like malignant tumors in animals with infectious features is furnished by the remarkable nasal tumors in cattle and horses recently described by Stenström[1] as occurring in endemic form in certain parts of Sweden. The essential facts are these: In 1908 there developed on a farm near Stockholm what is best described as a malignant growth in the nasal passages of a cow. During the next six years nineteen additional cases of the same kind developed on the same farm, eight of them in 1911. These twenty cases occurred in a herd of 160 animals, that is, 12.5 per cent. developed the disease. During the four years ending with 1914, seven cases of the same sort appeared on the same farm among the stock of twenty-four horses, the stable adjoining that of the cows. Two cows were sold in 1908 and taken to another farm hitherto free from the disease. Later these animals developed the disease, and in the course of the next four years four other cases appeared on the second farm. In 1912 eight cases developed on a third farm without any evident relation to the disease elsewhere.

The disease caused obstruction of the nasal passages, atrophy of the bones of the skull, emaciation, and in some cases exophthalmos. In practically every case the growth developed in the region of the ethmoid bone and generally invaded the neighboring sinuses. The rate of growth was slow, but eventually considerable size was reached. The structure is described as definitely carcinomatous, but sarcomatous districts were also present. In 17 per cent. of the cows metastases formed, usually in the regional lymph nodes, occasionally also in the lungs. A variety of bacteria were present; a gram-positive bacillus, resembling *B. pyogenes bovis*, was present constantly and in predominating numbers, but injections of this bacillus gave negative results. The results of experimental transplantations are to be reported later. Stenström regards the disease as unquestionably infectious.

Other examples of the endemic occurrence of new growths in animals might be cited, notably of the thyroid in trout in hatcheries; but in this case diametrically opposed differences of opinion are held as to the nature of the growth.

What are we to conclude with respect to Stenström's observations? Does acceptance of the sarcocarcinomatous nature of the disease described by him necessarily commit us to the view that it concerns an undoubted instance of infectious cancer? Not necessarily, because it is possible that the cancerous process developed on the basis of the lesions of a transmissible infection, perhaps more widely spread than recognized, the infection in certain animals being succeeded by malignant proliferation for the same as yet unknown reason that ulcer of the stomach or conditions of continued irritation are followed by carcinoma. If it proves true that ulcers of the stomach and duodenum are caused primarily by streptococci, carcinoma springing from ulcer would not be regarded as of infectious nature. Even successful transplantation would not be proof that the sarcocarcinoma described by Stenström is infectious; the only acceptable proof

1. Stenström: Communications de l'Institut de l'état à Stockholm, 1914, v.

is production of tumor by inoculation with a transmissible agent. Who would venture to deny the possibility that some day this will be done in the case of some one of the forms of growth now classed as cancer?

THE EMETIC ACTION OF CERTAIN DRUGS

Nearly all substances which produce a marked irritation in the upper gastro-intestinal tract are likely to induce vomiting. Under these extreme conditions the emesis represents a useful protective device of the organism, evidently intended to expel the offending substance from the alimentary canal. Quite aside from such more exceptional cases of local attack on the mucosa of the stomach and intestine, a variety of drugs used even in comparatively small doses provoke the act of vomiting as well as the attending or premonitory symptom known as nausea. Some substances, like the familiar apomorphin, act as emetics after introduction subcutaneously into the body as well as by oral administration. To explain this on the assumption of a purely localized stimulation within the gastro-enteric canal it is necessary to assume that the injected drug is actually secreted into the lumen of this tract.

The hypothesis of an irritant action on the alimentary mucosa is not the only one which may be fashioned to explain the emetic action of drugs. It is also plausible to postulate a central action exerted by the drugs on what has been designated as the vomiting center. As prominent pharmacologists have recently pointed out,[1] whether or not there is an actual anatomic nerve center presiding solely over the act of vomiting is still a matter of dispute; but the evidence seems overwhelming for the belief that there is some more or less specialized central nervous mechanism, possibly merely of a coordinating nature, which does control the act of emesis. The determination of the precise mode of action of emetics, that is, whether they initiate the vomiting act through an effect on a center in the higher nervous structures, or reflexly through an ultimate irritation of the peripheral mucosa of the alimentary tract, is of considerable importance. Nausea and emesis are undesirable incidental symptoms obtained in the use of certain drugs, notably morphin. To combat them rationally it is essential to know the point of attack. Furthermore, inasmuch as nausea is attended with an accentuation of mucous secretions and possibly also with a relaxation of the tonus of the bronchial musculature, emetics employed in a dosage just sufficient to induce these preliminary effects without vomiting tend to facilitate expectoration from the respiratory passages. The pharmacology of the emetics is thus somewhat interrelated with that of the expectorants; and an intelligent use of the latter in a therapeutic way also demands a knowledge of their mode of action.

If a drug produces emesis by action on a vomiting center rather than through the intermediation of the alimentary mucosa, it may be expected to manifest this effect in a smaller dose by intravenous injection than by oral administration. Furthermore, the emetic may be expected to act more promptly when given by vein than by mouth, for the intravenous path through the circulation to the central nervous system is a direct one and does not call for preliminary absorption or any indirect procedure to the gastro-intestinal membranes. It has further been pointed out by Eggleston and Hatcher[1] that if the typical phenomena of nausea and vomiting are produced in experimental animals from which practically the entire alimentary canal has been removed surgically, the seat of action must be central in character. To such criteria these investigators in the Laboratory of Pharmacology of the Cornell University Medical School have subjected a number of more or less familiar emetics or drugs exhibiting an incidental emetic action. They find that practically all alkaloids and alkaloidal drugs in common use, including morphin and preparations containing it, emetin, cephaelin, quinin, nicotin and lobelin, pilocarpin, aconitin and veratrin, ergot and apomorphin, which produce nausea and vomiting either as their chief or their side actions, do so by direct effect on the vomiting center. The smallest emetic oral dose was always larger than that required by intravenous administration, except in the cases of the ipecac alkaloids, in which the doses for the two modes of administration were practically the same. All of the drugs requiring the larger oral dose also exhibited a longer interval for the production of emesis after their administration by mouth than when given intravenously. This was also true of the ipecac alkaloids. Sodium salicylate, picrotoxin and the digitalis derivatives likewise produce nausea and emesis through direct central action.

According to Eggleston and Hatcher there may be, in the case of certain drugs with irritant properties, synergistic reflex and central actions, whereby a smaller dose by mouth may be effective than would be required for either action alone. Emetin is cited as affording an illustration of this. The possibility that some other drugs given orally may also have an irritant action on the alimentary mucosa is not excluded by the evidence in favor of the central action exhibited by them. We are told that it is probable that the ipecac alkaloids, as well as veratrin and sodium salicylate, may have this reflex action in man, at least in susceptible individuals.

In these valuable pharmacologic studies, the investigators incidentally tested the effects of some of the newer proprietary preparations of opium. Pantopon (pantopium hydrochloricum), which consists of the total alkaloids of opium in the form of hydrochlorids, was found to be "probably actually slightly more actively emetic than is to be accounted for by the mor-

1. Eggleston, C., and Hatcher, R. A.: The Seat of the Emetic Action of Various Drugs, Jour. Pharmacol. and Exper. Therap., 1915, vii, 225.

phin alone which it contains." Narcophin, which consists of the meconates of morphin and narcotin, was found "much more actively emetic than is morphin in the form of sulphate, rather than less so as claimed."

There is an immediately practical aspect to the demonstration of the central action of the salicylates in producing nausea and vomiting, in harmony with earlier observations of Waddell[2] and Hanzlik.[3] It is sometimes attempted to combat these familiar annoying side actions of the salicylates by the use of an excess of sodium bicarbonate or the employment of preparations which pass the stomach unchanged. This has been done on the assumption of a local irritant action on the gastric mucosa giving rise to the nausea. It appears, however, that emesis occurs as promptly after intravenous as after oral doses of salicylates; and it may be observed even in eviscerated animals in which none of the drug can reach the alimentary mucosa by any path whatever. It is well to know the futility of a procedure based on a demonstrably wrong conception of the mode of action of such a drug.

THE ADAPTATION OF THE OXYGEN CAPACITY OF THE BLOOD

The current belief in regard to the effect of residence at altitudes on the composition of the blood postulates an interesting physiologic adaptation of the organism to the decreased oxygen tension of the atmosphere at the higher levels. In a general way it is most commonly explained that, as an immediate effect of change to a region of low atmospheric pressure, there is a relative increase in the red blood corpuscles due to a concentration of the blood and a diminution of its plasma. Simultaneously, however, the blood-forming organs enter into a condition of increased activity, so that, after a stay of some duration at a height, both red corpuscles and hemoglobin are considerably increased in total amount.

The physiologic significance of such an increase in the oxygen-carrying capacity of the blood, when an atmosphere of low oxygen tension is breathed, is obvious. The differences in views on the subject relate to the details of these changes and the mechanism by which they are brought about. If the adaptive response of the blood system is associated merely with a diminished tension of oxygen, it ought to be possible to imitate all of the essential features even at sea level, independent of any cosmic effects, by maintaining individuals in atmospheres of lowered oxygen content. Accordingly, recent years have witnessed the production of apparatus and devices in which both animals and man can be kept for some time in an atmospheric environment that can be regulated at will. In the latest of these respiratory chambers, constructed at the University of Wisconsin by Kolls and Loevenhart,[1] an ingenious apparatus has been developed in which it is possible to keep animals in a given atmosphere of oxygen and nitrogen continuously for a week or more. The outfit is automatic in regard to the oxygen supply and does not require constant watching. Under such conditions the accessory effects of altitude, such as excessive light, temperature changes, increased evaporation, reduced carbon dioxid tension and reduced barometric pressure can be eliminated, so as to leave only one factor in common with high altitude, namely, the reduced partial pressure of oxygen.

The elaborate investigations of Dallwig, Kolls and Loevenhart[2] with the respiration chamber described show that a decrease in the oxygen tension of the respired air obtained by decreasing the oxygen concentration at atmospheric pressure or by reducing the barometric pressure stimulates the bone marrow and increases the erythrocytes and hemoglobin in the circulating blood in animals. From five to seven days are required for the increase in the blood count to become marked, but the maximum increase requires a longer exposure.

Increased blood counts obtained under conditions of diminished atmospheric pressure have in the past sometimes been attributed to concentration of the blood. The Wisconsin experiments show, however, that the results observed by Dallwig, Kolls and Loevenhart cannot be due to increased evaporation of water from the subjects. The weight records of the animals showing a gain in some cases coincident with a marked increase in erythrocytes speak against such an influence. The results clearly indicate that the increase in erythrocytes as well as hemoglobin is absolute and not relative. Comparisons of the composition of blood in superficial vessels with that from the carotids or heart showed further that the differences were within the limits of error, so that an altered distribution of the erythrocytes in the large and small vessels could not account for the higher counts.

It has been possible in some cases to increase the total hemoglobin per kilogram of animal 43 per cent. In order to produce these effects, the oxygen pressure in the respired air must be reduced at least to approximately 14 per cent. of an atmosphere. The optimum oxygen pressure for increasing the oxygen capacity of the blood is apparently not far from 10 per cent. of an atmosphere. Examination of the bone marrow of the animals kept under conditions of decreased oxygen supply showed macroscopically a disappearance of the fat and an extension of the red marrow, and microscopically a marked hyperplasia of the erythrocyte-

2. Waddell, J. A.: A Comparative Investigation of the Effects and Toxicity of Sodium Salicylates of Natural and Synthetic Origin, Arch. Int. Med., December, 1911, p. 784.

3. Hanzlik, P. J.: A Study of the Toxicity of the Salicylates Based on Clinical Statistics, THE JOURNAL A. M. A., March 29, 1913, p. 957.

1. Kolls, A. C., and Loevenhart, A. S.: A Respiratory Chamber for Small Animals, Am. Jour. Physiol., 1915, xxxix, 67.

2. Dallwig, H. C.; Kolls, A. C., and Loevenhart, A. S.: The Mechanism Adapting the Oxygen Capacity of the Blood to the Requirements of the Tissues, Am. Jour. Physiol., 1915, xxxix, 77.

forming centers and an equally marked dilatation of the capillaries and small vessels of the marrow, which were engorged with blood. The picture is practically identical with that seen after hemorrhage, except for the engorgement of the vessels, which is not seen in the latter condition. It has not been possible to produce depression of the bone marrow by decreasing the oxygen supply. Stimulation results even when the oxygen pressure falls to 6 per cent. of an atmosphere. It is possible to stimulate the bone marrow to a certain extent by increasing the carbon dioxid tension of the respired air, but it is not an efficient stimulus. A comparison of the respiratory center and the bone marrow in their reaction to a decreased supply of oxygen and an excess of carbon dioxid shows that they are practically equally sensitive to oxygen want, but that the respiratory center is far more sensitive to carbon dioxid than is the bone marrow.

In discussing the mechanism of the stimulation of the bone marrow in atmospheres of low partial pressure of oxygen, whether at atmospheric pressure or at reduced barometric pressure, Loevenhart and his collaborators point out that the stimulation shown by the bone marrow in response to decreased oxygen supply is by no means unique. Similar reactions are to be seen in the respiratory, vasoconstrictor and cardioinhibitory centers, and the mechanism is in all cases probably identical. They point out that the external respiration, the circulation and the bone marrow are the three physiologic mechanisms which maintain the chemical environment essential for tissue respiration. The respiratory movements are controlled by the respiratory center; the oxygen capacity of the blood is controlled certainly in large part by the activity of the bone marrow.

NEPHRITIS IN THE BRITISH TROOPS IN FLANDERS

War affords opportunity for the medical observation of large numbers of selected persons under unusual, but fairly uniform, conditions of life. Much of the information gained during the present war has concerned the epidemiology of infectious disease, and the complications and treatment of wounds. Recently John Rose Bradford[1] has indicated that other departments of medicine may profit by the medical lessons of the war.

Beginning in March, 1915, and continuing thereafter, there were admitted to hospital a large number of soldiers suffering from nephritis characterized by moderate dropsy, frequent dyspnea and bronchitis, and sudden onset, often complicated by uremic manifestations and epileptiform seizures. The urine was scant, and contained large amounts of albumin and casts. The course was unusually short, and terminated in rapid recovery with prompt subsidence of the edema within a few days. In these patients there were no evidences of previous cardiovascular or renal disease, and the mortality was extremely low as compared with that of acute nephritis in civil practice. The waxy appearance of the face, and the pallor of the usual picture of acute nephritis were absent. Inflammatory complications were extremely rare.

The chief differences between these cases of acute nephritis and those seen in civil practice were the rapid subsidence of the dropsy, and the extremely low mortality. In casting about for the cause of the disease, Bradford adduces a number of facts of interest. Up to March, 1915, nephritis was rare among the troops, although there were many instances of frost bite and other exposure previous to this time. Possible infectious causes were carefully sought for, but in only 10.4 per cent. could a history of severe "cold," diarrhea or sore throat be obtained. About 30 per cent., however, gave a history of bronchitis, and had signs and symptoms of bronchitis, at the onset or during the course of the illness. Mild pulmonary infection might be regarded as an important etiologic factor, were it not for the fact that the Indian troops suffered extensively from bronchitis; but nephritis was extremely rare among them.

The extreme degree of exposure to cold and wet, to which many of these men were exposed, would offer a reasonable cause were it not for the fact that a number of hospital orderlies and others less exposed suffered from the same clinical form of renal disease. Age and length of service with the expeditionary force seemed to have no relation to the incidence of the illness. Bradford is inclined to the theory of a mild infection as the chief factor in the causation of the malady.

From the physiologic standpoint, the clinical picture described by Bradford suggests an acute edema, involving the kidney, giving rise to sudden and quickly subsiding dropsy, and the brain, causing apathy, drowsiness and epileptiform seizures. It is perhaps futile to speculate as to possible causes of such physiologic disturbances, other than those suggested by the facts submitted in the report. It would seem possible, however, that abnormalities in diet, under the stress of the campaign, might result in a loss of normal balance of the salts of the body, and, combined with the unusual exposure, give rise to temporary acidosis and edema of the kidney. The absence of renal disease of this type among the Indian troops may have some bearing from this angle. In favor of the infectious theory, it may be urged that in persons under such severe physical stress, resistance to infection is necessarily lowered, and bacteremia may possibly result without external clinical signs. Finally, in comparing the short course and low mortality of

1. Bradford, J. R.: Nephritis in the British Troops in Flanders, Quart. Jour. Med., 1916, ix, 125. Paris Letter, Acute Nephritis Among the Troops in the Field THE JOURNAL A. M. A., March 4, 1916, p. 752.

these cases of acute nephritis with the more serious cases in civil practice, we must bear in mind that we are here dealing with a selected group of previously healthy young adults who might be expected to return more quickly to normal, after the removal of unfavorable influences, than would a like number of unselected members of a civil population.

IMMATURE VEAL AS FOOD

Veal is the meat of calves which, under the United States meat inspection regulations, must be not less than three weeks old at the time of slaughter. Meat of calves less than three weeks old is popularly known as "bob veal." In Europe no objection is raised to the use of veal from younger calves; and it is stated that in Germany they are commonly slaughtered at from three days to three weeks of age.[1] The regulation which is in force in this country reflects a widespread belief that the meat from very young calves is, for some reason, unfit for human consumption. Veal is in general valued less highly as a dietary product than beef; and the younger the animal the less valuable its flesh is considered to be. Accordingly American textbooks on dietetics speak of veal as tough and indigestible, "especially when obtained from animals that are killed too young." Veal has been charged with a tendency to produce indigestion; and diarrhea has been described as a symptom of the unwholesomeness of "bob veal."

The attempt to marshal the evidence on which these serious charges are based and to follow the implications of harmfulness to their sources proves to be almost futile. The Bureau of Animal Industry, which has long been interested in the question of the digestibility and wholesomeness of different kinds of meat, has not been successful in tracing the basis for the currently expressed views. The biologic chemist of the pathologic Division, Dr. W. N. Berg,[2] states that the argument has been offered that the metabolism of the fetus and of the newly born is different from that of older animals, and that there is a possibility of toxic substances being present in embryonal or young tissues, which substances, though present in amounts too small to be detected by analytic methods, may be very powerful in their action on the consumer of very young meat; or, as is sometimes alleged, the newly born animal does not excrete its metabolic endproducts fast enough, with the result that its tissues are loaded with waste material. The polypeptid nitrogen which passes unused through the assimilatory system of the fetus or of the newly born, however, is not significant. If by any chance the tissues of a very young calf happened to retain some of its own metabolic products because of retarded excretion or from any other cause whatsoever, so long as the animal was normal otherwise there would be practically no danger to the consumer of such meat from poisonous endproducts of protein breakdown. But the tissues of very young calves are not loaded with unexcreted nitrogen. The data obtained on this point are direct and conclusive.

In an extensive investigation undertaken to ascertain whether the flesh of calves three weeks of age and under is or is not fit for human food, Berg compared the chemical composition of mature beef with that of immature veal. No differences between them that are dietetically significant were detected. The average water content in beef and veal was 74 and 77 per cent., respectively; but Berg points out that such differences are physiologically of no importance. As so much emphasis has been placed on the relative indigestibility of veal, it is interesting to note that in a large number of artificial digestion experiments conducted under rigorous scientific control, immature veal digested as fast as mature beef.

The foregoing facts are further substantiated by direct feeding experiments, not only under ordinary conditions of maintenance and growth, but also during periods of reproduction, which must be regarded as the severest test of dietary efficiency. Berg found that when animals were fed on a diet in which immature veal was the sole source of nitrogen, the young grew normally, and the older ones became fat. A pair of animals, after living two thirds of a year on the diet, produced a litter of healthy young which, after the nursing period, in turn continued on the immature veal diet with excellent growth.

Corroboratory experiments on human subjects are not wanting. Professor Fish[3] of Cornell University conducted dietetic experiments in which seven families of twenty persons of various ages received immature veal as part of their diet. All partook of the veal and appeared to relish it. None of the families reported any disturbance of any of the bodily functions; the health was apparently normal and each family was ready to receive a portion whenever another carcass was available. The claim that the flesh of very young animals has a laxative effect on human beings could not be verified.

In the light of all the negative findings and the indefinite and unverified character of the statements on record it is not easy to justify or understand the current embargo on very young veal. The work of the investigators who have given serious attention to the subject indicates, in the words of a government publication, that immature veal, when properly prepared, is fit for human food, especially when its deficiencies

1. Sherman, H. C.: Food Products, New York, 1914, p. 178.
2. Berg, W. N.: Biochemical Comparisons Between Mature Beef and Immature Veal, Jour. Agric. Research, 1916, v, 667.
3. Fish, P. A.: Preliminary Observations on Bob Veal, Rep. N. Y. State Vet. Coll., 1909-1910, p. 130; Further Observations on Bob Veal, ibid., 1910-1911, p. 138; Bob Veal and the Conservation of the Meat Supply, Proc. Am. Vet. Med. Assn. 49th Ann. Conv., 1912, p. 550; The Digestibility and Decomposability of Bob Veal, Rep. N. Y. State Vet. Coll., 1912-1913, p. 51.

in fat and possibly in small amounts of undetermined constituents are counterbalanced in the ordinary mixed diet. This declaration, based as it is not only on negative contradictory evidence, furnished by the comparative analyses and artificial digestion experiments, but also on positive evidence, furnished by nutrition and growth experiments, should also have the effect of removing the proscription under which all veal and perhaps pork, too, as food, especially for the young, have rested. Likewise, it relieves food chemists and physicians from the embarrassment of having to confess, in the practical world, that they do not know why veal is not so good a food as beef or mutton.

Current Comment

THE EFFECT OF ATMOSPHERES RICH IN OXYGEN

There is a seeming incongruity in speaking of oxygen as a poison; yet it has long been known that if a warm-blooded animal be submitted to pure oxygen at a pressure of several atmospheres it will die as promptly and surely as if it were in an atmosphere of pure nitrogen. Even exposures to lesser pressures of oxygen over a considerable time are attended with pathologic results, the most familiar of which are severe inflammation of the lungs, thus leading indirectly to death. Karsner[1] has attempted to define more accurately the possible pathologic effects of this gas, which is being used freely as a therapeutic agent, as a prophylactic against asphyxia in anesthesia, in the industries, and in the exigencies of submarine or aerial performances. His studies show that atmospheres containing from 80 to 96 per cent. of oxygen under normal barometric pressure usually produce, in animals, in the course of one or two days, congestion, edema, epithelial degeneration and desquamation, fibrin formation, and finally a pneumonia, probably of irritative origin and to be described as a fibrinous bronchopneumonia. Although deficiency of oxygen may affect the hemopoietic system, animals subjected to high oxygen percentages failed to reveal any demonstrable pathologic changes in the blood, spleen, lymph nodes or bone marrow, except for the presence of congestion which is accounted for in other ways.

SAMUELS LOSES—THE PUBLIC WINS

The Wichita *Eagle* for Feb. 29, 1916, chronicles the fact that the United States Court of Appeals has confirmed the conviction of "Prof." Henry Samuels of Wichita for using the mails to defraud. Readers of THE JOURNAL will remember the Samuels case. As long ago as 1910 we called attention to the outrageous swindle that this man was perpetrating on the sick in selling as a cure for practically every disease a mixture of sugar and salt in hydrant water. Later, THE JOURNAL[2] gave the public the facts regarding Samuels' attempt to reestablish his mail-order business at Detroit. The Michigan city made it so warm for this individual that he went back to Wichita. In 1914 the postoffice officials proceeded against Samuels for violating the postal laws in obtaining money through the mails by means of false and fraudulent pretenses, and on June 1, 1914, Samuels was denied the use of the mails. At the same time Samuels was indicted by the federal grand jury on criminal charges connected with this fraud, and later found guilty. On March 4, 1915, he was sentenced to serve one year and one day in the federal penitentiary and to pay a fine of $5,500. Samuels appealed, of course, but, according to the Wichita *Eagle*, the appellate court has confirmed the findings of the lower court.

"EASY MONEY" LIBERALITY

One of the favorite themes of the defenders of quacks and "patent medicine" venders is the liberality and public spiritedness that characterize this class of citizens. The Samuels case referred to in the preceding comment is in point. The Wichita paper that told of the appellate court's decision had its reporter call on Samuels and apprise him of the fact. In his "story" the reporter described the room in which he was received. It was "beautifully appointed"; it was "done in mahogany"; it bore, in short, evidences of the wealth of its owner. How that wealth was obtained the reporter does not describe. Nothing is said of the widow whose husband had used the Samuels nostrum, and who, left alone with two little ones, wrote asking Samuels to take back the medicine that was left and refund some of the money. Nothing was said of another widow whose husband "kept up with" Samuels' mixture "until the last day"; she, left with three children, implored Samuels to return at least some of the money that he had received from the man now dead. Nothing was said of the case of the poor man with a wife and four children who asked for a return of the $5 he had sent Samuels for his sugar and salt mixture with which to treat the eye of his little boy, obviously without results. Nothing was said of the hundreds, yes, thousands, of eternally hopeful sick who threw away on a worthless mixture money that in many cases represented real sacrifices. The reporter did not mention these facts, but Samuels being a "substantial citizen" of Wichita, the reporter did mention that when institutions or individuals sought charity Samuels "gave with open hands and a smile." Curiously enough, this open-handed generosity seems characteristic of the nostrum faker. To civic, commercial or, more often, to religious organizations, the "patent medicine" manufacturer is always liberal. Why shouldn't he be? His money comes "easy." For those engaged in a business that fails to command the respect of the public, there is nothing like indiscriminate charity to make the unthinking or shallow-thinking forget the deeper evils behind it. Should the Ladies' Aid Society desire a small donation, what is simpler than to give it the $5 just received from a hopeful and credulous consumptive? Should the Home for the Friendless need

1. Karsner, H. T.: The Pathological Effects of Atmospheres Rich in Oxygen, Jour. Exper. Med., 1916, xxiii, 149.

2. The Samuels case is reprinted in the pamphlet "Medical Mail-Order Frauds," price 10 cents, published by the American Medical Association.

help, what is easier than to turn over a money-order just received from some poor unfortunate who believes he is going to be cured of paralysis by a mixture of salt and water? Should a subscription be desired toward the erection of a new church, give liberally. What if the bricks thus furnished do represent the savings of a Bright's disease victim, a morphin habitué or a blind man, sent in the hope that cure is in reach? Generosity is an admirable trait — sometimes. The liberality of those who wring from the credulous sick a fortune through the sale of a worthless nostrum is not a form of charity that will appeal to decent men.

THE NATURE OF PEPSIN

The nature of the digestive ferments or enzymes is far from solved. A generation ago they were usually conceived to be protein in nature, and the procedures selected to isolate or purify enzyme preparations were borrowed from the then current methods of protein manipulation. So far as one can judge at present, the chemical nature of enzymes is probably of very different kinds. There is direct evidence that some are not proteins. A recent writer[1] ventures the opinion that it is doubtful if any enzymes are proteins. He adds that some appear to be complex systems of colloids with inorganic components, or other simple compounds. Pepsin, one of the most prominent if not the most important of the enzymes with which the medical sciences deal, is colloidal in nature, or if not colloidal itself, is attached to colloids. From such investigations as have been made, it appears probable that pepsin either is a protein or is united with a protein. Some students of the subject have conceived the enzyme to correspond with protein compounds of the proteose type; others have assigned to it either larger or smaller hypothetic molecular structure. It has occurred to Aldrich[2] to ascertain something of the nature of pepsin and of enzymes in general by determining what relation, if any, exists between the total nitrogen, the alpha-amino nitrogen, and the strength of different samples of pepsin. Of late the estimation of the alpha-amino nitrogen by the Van Slyke method in substances of protein origin has gained prominence as an analytic indication of the degree of disintegration of the protein molecule. Native proteins react with only a trace of their nitrogen to this method, nearly all of the amino nitrogen being bound in the peptid linkings of the protein molecule. In general, the smaller the molecule, the greater the proportion of free amino nitrogen. Aldrich's examination of the products shows that there is a progressive decrease in the percentage of the alpha-amino nitrogen in the samples in the order of their strength. According to this it would seem as though the method used in the purification of the pepsins gradually eliminates the simpler alpha-amino nitrogen compounds, and consequently causes an accumulation of more complex bodies in the stronger pepsins. Taking it for granted, Aldrich adds, that with the still more active pepsins the recognizable alpha-amino nitrogen content will be further decreased, we should finally by sufficient purification obtain a pepsin having very little detectable alpha-amino nitrogen or an amount approximating that in the native protein. The inference from this is that the more highly purified or more active pepsin products approach the native proteins in complexity.

1. Bayliss, W. M.: Principles of General Physiology, London, 1915, p. 331.
2. Aldrich, T. B.: Relative to the Total Nitrogen and Alpha-Amino Nitrogen Content of Pepsins of Different Strengths, Jour. Biol. Chem., 1915, xxiii, 339.

DEATH OF DR. RODMAN

Word has been received as we go to press that Dr. William L. Rodman, President of the American Medical Association, died in Philadelphia, of pneumonia, Wednesday, March 8, 1916, after an illness of two days.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Baby Week Campaign Plans.—On the initiative of the Federation of Women's Clubs, arrangements are being made for the baby week campaign. Baby Week, however, is, in the District of Columbia, to be from May 6 to 13 and will not conform to the week generally adopted throughout the country.

Investigation of Milk and Milk Products Endorsed.—The board of directors of the Association for the Prevention of Tuberculosis has endorsed Representative Linthicum's resolution providing for the appointment of a committee from the House of Representatives to investigate the milk supply and the milk products of the country in their relation to public health.

FLORIDA

State Board News.—The annual meeting of the State Board of Health was held in the new State Laboratory Building, Pensacola, February 8. A sanitary engineer was appointed and six additional nurses were employed to aid in the tuberculosis work.——The health train of the board, which made its initial run to Key West and Miami early in the year, was brought to Pensacola for the meeting of the board.

Hospital Items.—The Hospital for Negroes at St. Petersburg was opened in the building formerly used for the Samaritan Hospital, the first week in February.——The West Coast Hospital Association announces that the formal opening of the Morton F. Plant Endowed Hospital, Clearwater, occurred February 1, followed by an informal reception to the general public.——The trustees of the Lakeland Hospital at their meeting, January 25, elected a medical and surgical staff for the institution. It is expected that the work will have been so far completed that the corner-stone may be laid this month.

GEORGIA

Grady Bond Issue Endorsed.—The Physicians' Club of Atlanta at its annual meeting, February 16, unanimously pledged its support to a campaign for a bond issue sufficient to meet the needs of Grady Hospital.

Personal.—Dr. P. H. Raines has been appointed assistant librarian of the Georgia Medical Society, Savannah, and took up his duties, March 1. Dr. Victor H. Bassett is librarian of the society.——Drs. Joseph H. Bradfield, Julius E. Sommerfield, William L. Gilbert, S. W. Foster, Joseph H. Hines, Carl C. Aven and Allen H. Bunce have been elected members of the board of directors of the Atlanta Antituberculosis Association.

Hospital News.—The Henrietta Egleston Memorial Hospital for Children is to be established in Atlanta with accommodation for seventy-eight patients—fifty-three free and twenty-five pay beds. Mr. Egleston made an initial bequest

of $100,000 for the institution, and if his estate totals $750,000, there will be an additional quarter of million available to the hospital and the final amount will be eventually about $600,000 by the reversion of annuities.——Members of the Savannah Hospital corporation elected a new board of managers at the annual meeting, February 7.——Drs. Alexander G. Little and Archie Griffin formally opened their new hospital at Valdosta, February 5.

ILLINOIS

Personal.—Dr. John A. Wheeler, Auburn, sheriff of Sangamon County, who has been enforcing the Sunday saloon closing law against great odds, is reported to have won a victory in the primaries last week.——Dr. Harry G. Wood, Galesburg, has started for Montreal, where he expects to be assigned to duty with the Royal Army Medical Corps in France.——Dr. George P. Gill, Rockford, returned February 25 after more than six months in overseas service in France.

Epidemic Diseases.—The health authorities of Elmhurst have ordered the churches, schools and moving picture houses closed on account of the presence of scarlet fever, of which there are now nine cases in the village.——Scarlet fever is still prevalent in Evanston.——Peoria reports eighty-three cases of scarlet fever and twenty-six cases of smallpox.—— The secretary of the state board of health, on March 1, issued a warning to health authorities throughout the state, in view of the spread of smallpox and scarlet fever. The communities most seriously infected by smallpox are Peoria and vicinity, Staunton, Decatur, Springfield, Woodford and Fayette counties.——Dr. Charles E. Crawford of the state health department located fifteen cases of smallpox in a mining settlement near Peoria on February 24. Rigid quarantine was established.

Chicago

Quarantine Lifted.—The smallpox quarantine of two and one-half weeks at Cook County Hospital was lifted March 5.

Hospital May Lose Bequest.—Alleged faulty designation of Mercy Hospital in the will of Charles H. Haines, St. Charles, may cost the institution a two-thirds interest in the estate which is appraised at one-half million dollars. Relatives not mentioned in the will have filed an answer to the partition suit instituted by the hospital and claim that "the Mercy Hospital of Chicago" named in the will does not exist.

Personal.—Dr. Thomas Lewis Gilmer has been selected by the trustees of Northwestern University to fill the vacancy in the deanship of the dental school caused by the death of Dr. Greene Vardiman Black.——Dr. Marie A. Motis has been appointed health commissioner of Cicero.——Dr. Howard O. Shafer has announced that he will give up his work in Chicago to manage the hospital established in Rochester, Ind., by his father, the late Dr. Winfield S. Shafer.

New Hospital Opened.—The new Central Hospital, recently built by the Illinois Central Railroad Company at Fifty-Ninth and Jackson Park Avenue, at a cost of $360,000, was opened with formal ceremonies, March 4. The guests of honor were Drs. Joseph C. Bloodgood, Baltimore, and William A. Evans, Chicago. The hospital is up to date in its equipment, and while primarily intended for the use of the railroad employees, other patients will be admitted when space permits. Dr. Guy G. Dowdall, chief surgeon of the railroad, is in charge of the institution. The hospital was opened to receive patients on March 5.

Typhoid Fever.—City water for drinking purposes was shut off at the public schools in the Sixty-Eighth Street pumping station district, March 6, and will remain shut off for two or three days. There have been 100 cases of typhoid fever on the south side as a result of the contamination of one of the wells connected with the Sixty-Eighth Street pumping station. The water pipes are to be flushed to remove impurities. The condition of the pumping station is to be corrected to prevent a recurence of the flooding of the wells.——During February, 156 cases of typhoid fever were listed and twenty-four new cases during the first two days of March, and the health department has repeated its warning to residents of the south side to boil all water.

Free Lectures on Tuberculosis.—A systematic course of lectures intended for those interested in the tuberculosis problem will be given under the auspices of the Chicago Tuberculosis Institute at the City Club of Chicago, throughout March and April, beginning March 6, at 6:30. Cards of admission to the lectures will be sent on application to the Chicago Tuberculosis Institute, 8 South Dearborn Street, or may be obtained at any of the lectures at the City Club. The following is the program:

Monday, March 6: "Bacteriology and Pathology of Tuberculosis." Dr. Harry J. Corper, Laboratory Director Municipal Tuberculosis Sanitarium.

Monday, March 13: "Sources and Channels of Tuberculous Infection." Dr. Walter A. Gekler, Associate Medical Director, Municipal Tuberculosis Sanitarium.

Thursday, March 16: "Prevalence and Distribution of Tuberculosis." Dr. Theodore B. Sachs, President, The Chicago Tuberculosis Institute and Municipal Tuberculosis Sanitarium.

Thursday, March 23: "Tuberculous Infection in Childhood." Dr. Orville W. McMichael, Head Physician, Municipal Tuberculosis Dispensary, Chicago Policlinic.

Monday, March 27: "Contributory Factors in the Development of Tuberculosis: Personal and Public Hygiene." Dr. John Ritter, Head Physician, Municipal Tuberculosis Dispensary, Rush Medical College.

Monday, April 3: "Contributory Factors in the Development of Tuberculosis: Industrial Hygiene." Dr. James A. Britton, Associate Medical Director, International Harvester Co.

Thursday, April 6: "Schools and Tuberculosis." Sherman C. Kingsley, Director, Elizabeth McCormick Memorial Fund.

Monday, April 10: "Present Status of Medical and Specific Treatment of Tuberculosis." Dr. Ethan A. Gray, Medical Director, Chicago Fresh Air Hospital.

Thursday, April 20: "Hospital, Sanatorium and Dispensary Control of Tuberculosis." Dr. John W. Coon, Superintendent, Municipal Tuberculosis Sanitarium.

Monday, April 24: "City Program for the Control of Tuberculosis." Mr. James Minnick, Superintendent, Chicago Tuberculosis Institute.

INDIANA

Medical Library for Gary.—Members of the Gary Medical Society are planning to establish a medical library. At a recent meeting it was decided that each member should donate $10 a year toward the library, an equal amount to be given by the library board. The public library will give a separate room for the use of the library of the medical society.

Contract Let this Month.—Work on the Marion County Tuberculosis Sanatorium to be built near Oaklandon will be started early in April, the contract being let this month. The building is expected to cost about $70,000. The first buildings to be erected will be an administration building with two wings, one for male and the other for female patients. The plans at present projected provide for the accommodation of eighty patients, but eventually the institution will be able to care for 300 patients.

Typhoid in Indianapolis.—Dr. Herman G. Morgan, city sanitarian of Indianapolis, reports an epidemic of typhoid fever on the South Side. The cause was attributed to a contaminated milk supply. Since February 1, thirty-five cases have been reported from the southern part of the city alone. Only twelve cases of typhoid were reported during the whole month of February last year. Dr. Morgan said that the cause of the epidemic was under control and a further spread of the disease is not expected, only one case having been reported during the last three days.

Fresh-Air Schools.—Three teachers from the open-air schools, Indianapolis, talked to the social workers on "The Fresh Air School in the Antituberculosis Fight," at a recent meeting held in the rooms of the Charity Organization Society. The purpose of this meeting was to explain the need of the open-air school and to keep the social workers informed as to the work accomplished by the school. According to the teachers' report, there have been surprising results in physical and mental strength of sick children and normal children in the schools. The technical school opened last year with an enrolment of twenty-two children. These children gained an average of 7.83 pounds each during the time they were in the school. This year the enrolment is fifty; the gain in pounds for each child has been 5.96, being decreased to some extent through the rapid gaining of normal size of those who were there last year and who returned this year. The Indianapolis school board employs the teachers and has built two sleeping porches. The Antituberculosis Society provided the water, gas and lunches for those who cannot afford to pay for their own. The society also pays car fare when the children are too poor to pay it. The children in the public schools are examined by physicians and when a child is found to be suffering with a mild case of tuberculosis it is placed on the waiting list. In accordance with a resolution of the city school board the parents of forty children in two consecutive grades in any school could have an open-air room if a teacher could be obtained to teach the children. The restriction on opening such schools is to keep the additional expense as low as possible.

LOUISIANA

Quarantine Station to be Established.—A quarantine station at or near New Orleans, at a cost not exceeding

$300,000, exclusive of the cost of real estate, is proposed in a bill introduced into congress by Representative Estopinal of Louisiana. The bill authorizes the secretary of the treasury to receive on behalf of the United States such real estate as may be donated for the purpose of enabling them to carry into effect the provisions of the act.

MARYLAND

Clinic for Carolina Surgical Club.—The hospital of the University of Maryland held a series of clinics on March 2, before the North Carolina Surgical Club, those participating being Drs. Randolph Winslow, John M. Hundley, Arthur M. Shipley, Robert P. Bay and Fred W. Rankin. The North Carolina Surgical Club is a traveling organization and the visit to the clinics in Baltimore is part of its present itinerary.

To Honor Winslow.—Arrangements are being completed for the commemoration of the twenty-fifth anniversary of Dr. Randolph Winslow as professor of surgery at the University of Maryland. The celebration will take the form of a dinner. The committee of arrangements includes Drs. Wilbur P. Stubbs, William Tarun, G. Milton Linthicum, Alexius McGlannan, Arthur M. Shipley, Elmer Newcomer and Fred W. Rankin.

Child Welfare Week in Baltimore.—Child Welfare Week, which is being conducted throughout the country, was officially opened in Baltimore, March 4. Pushed originally by the State Federation of Women's Clubs, the local observances represent nearly every educational, medical and social service organization in the city. The Medical and Chirurgical Faculty has cooperated by arranging its sixth annual health conference to be held the same week, so that speakers might include the baby welfare movement. A feature of the celebration is the exhibit of hundreds of posters that have been made for the Better Baby Poster Contest. Every visitor will be entitled to a vote in deciding the winners of the three prizes offered.

MASSACHUSETTS

Chiropodists' Bill Defeated.—At a session of the senate on February 3, a report of the Committee on Public Health against the registration of chiropodists was accepted without discussion.

Preparedness in Harvard.—More than 100 students of Harvard Medical School have been enrolled to work in cooperation with the Harvard regiment. The unit will pursue a regular course of instruction in sanitation, medical administration, first aid and discipline. It has also planned to form an ambulance corps.

Tech Man Appointed Chief Sanitary Engineer.—George W. Simons, Jr., assistant to the head of the Sanitary Engineering Department of Harvard Medical School and Massachusetts Institute of Technology, has been appointed chief sanitary engineer to the State Board of Health of Florida, and will take up his new work on July 1.

Plan to Send Milk to European Babies.—The Massachusetts Branch of the Citizens Committee for Food Shipments has scattered broadcast circulars stating that 5,000,000 babies in Germany and Austria-Hungary are suffering from want of milk; that $1 will supply a baby for a week and that $1,000 will establish, operate a good-sized milk depot and keep 100 babies alive and well for ten weeks, and asking contributions for this philanthropic work.

Personal.—Dr. Henry S. Forbes, Boston, who has been interned by Bulgarian authorities in Monastir, was released, March 6.——Dr. Frederick Herman Verhoeff has been made assistant professor of ophthalmic research; Dr. Elliott Gray Brackett, assistant professor of orthopedic surgery; Dr. Clifford Black Walter, assistant in ophthalmology; Dr. Robert Louis Levy, assistant in physiology, and Dr. George Richard Minot, assistant in chemistry at Harvard Medical School.

Milk Legislation.—On the petition of Dr. J. Allen McLaughlin, state health commissioner, a bill has been introduced before the Massachusetts General Court which aims to prevent the sale or delivery of milk in any city or town without a permit from the local board of health after inspection of the facilities for producing and handling this food. It provides that the permit may contain reasonable conditions for the protection of the public health and may be revoked for failure to comply therewith. The bill has been referred by the Senate to the committee on agriculture and public health.

NEW YORK

Revision of State Sanitary Code.—A recent revision of the state sanitary code provides that, in a case of infectious disease when no physician is in attendance, it shall be the duty of the head of the household and of the proprietor or keeper of any hotel, boarding house or lodging house to report immediately to the health department all facts relating to the illness of any one in the household who appears to be affected with any communicable disease.

New Avenue of Public Health Education.—State Commissioner of Health Biggs, on March 4, announced that five railroads have given the department of health permission to post health bulletins in their stations. These railroads are the following: New York Central, Delaware and Hudson, Lehigh Valley, Erie, and Pennsylvania. With the cooperation of these five railroads, the department of health will be able to post bulletins in more than 1,000 railway stations.

To Amend Boylan Law.—An effort will be made to have the state drug law amended so that a physician may not prescribe a habit-forming drug for a period of more than two weeks, and by which the physician will be required to make three copies of each prescription so that one may be filed with the board of health. These amendments were included in the original bill but were cut out at the time the bill was introduced because of the strong opposition to them which threatened the defeat of the entire bill.

"Patent Medicine" Bill.—A bill has been introduced in the legislature simultaneously by Assemblyman Fertig and Senator Hamilton which aims to compel "patent medicine" manufacturers to inform the public as to the exact contents of their nostrums. The proposed measure follows exactly the provisions of the ordinance of the health department of New York City. The latter earnestly requests every public spirited citizen to give effective support to this measure, so that the standard set by the municipality and state of New York will eventually lead to national legislation for the control and sale of "patent medicines."

Publicity and Education.—In order to inform the public of what has been done by the department, and how the appropriations were expended during the last fiscal year, Health Commissioner Biggs has mailed to members of the legislature, mayors of cities, village presidents, health officers and others interested, a pamphlet summarizing the work of the department from Oct. 1, 1914, to Sept. 30, 1915. Particular attention is called to the reduction in the death rate from 15.8 per 1,000 in 1913 to 15.1 in 1915, and also to the marked reduction in the infant death rate from 120 in 1913 to 101 in 1915.

New York City

Trichinosis in Far Rockaway.—Four deaths from trichinosis have occurred within two weeks in St. Joseph's Hospital at Far Rockaway. All the victims were members of one family who had eaten two young pigs bought from a peddler.

Lectures on Health Topics.—The Working Women's Protective Union is giving a course of seven lectures on health subjects. Among those who have agreed to speak are Drs. Henry Dwight Chapin, Walstein M. Tompkins, John B. Solley, Jr., Haven Emerson and William J. Robinson.

Death of Mrs. Jelliffe.—On March 3, Helena Leaming Jelliffe, wife of Dr. Smith Ely Jelliffe, died from cerebral hemorrhage, aged 48. Although not a physician, Mrs. Jelliffe was in close touch and sympathy with medical work, and her cooperation with her husband, chiefly through translation, has broadened the fields of nervous and mental medicine.

Free Course of Instruction in Contagious Diseases.—The department of health announces that, beginning March 7, at the Willard Parker Hospital, a free course of instruction in contagious diseases will be given. Each course consists of six clinical and two laboratory lessons given during two successive weeks on Tuesday, Wednesday, Thursday and Friday, at 2 o'clock. Classes are limited to ten members. Physicians desiring to participate are invited to register with the Bureau of Public Health Education, Department of Health, 139 Centre Street.

Health District No. 1.—The *East Side Chronicle*, which is the monthly periodical of Health District No. 1, has found it necessary to increase its issue from 5,000 to 15,000 copies. This is very gratifying to those conducting the work in this district, and bears witness to the interest taken in this work which was begun several years ago as an experiment to demonstrate the value of intensive health work. Health

District No. 1 is amply demonstrating the value of its methods. The health officer of the district has been elected a member of the executive board of the East Side Neighborhood Association, a director of the Parent's Association of Public School No. 62, and a member of the executive board of the Seward Park Community Center; thus all these associations operate in Health District No. 1, and an active participation of the health officer in all the affairs of the district is insured.

NORTH CAROLINA

Personal.—Dr. Hubert A. Royster, Raleigh, secretary of the state board of medical examiners, has accepted an invitation to deliver the address to the graduating class at the Naval Medical School, Washington, D. C., April 12.

North Carolina in Registration Area.—Two clerks from the U. S. Department of Vital Statistics at Washington, D. C., have spent several weeks in checking up the vital statistics of the state board of health at Raleigh, and it is expected that on their return and report the state will be admitted to the registration area.

Meeting of State Society.—The sixty-third regular annual session of the Medical Society of the State of North Carolina will be held in Durham, April 18-20, under the presidency of Dr. M. Hall Fletcher, Asheville. County secretaries are reminded of the change of date of holding the annual session, which was formerly held in June.

Antityphoid Unit.—The state board of health announces that Cabarrus and Mecklenburg counties are the first to make application and to be accepted by the state board for the unit of antityphoid work which the board proposes to undertake for a number of counties during the summer. These counties have already made the required appropriation and the board is preparing the schedule, which will be ready in April or May. As a result of the work done last year, more than 50,000 people were immunized against typhoid fever.

Tuberculous Clergymen.—The state board of health has offered space in the park of 1,400 acres surrounding the State Sanitarium for Tuberculosis, Montrose, to any church for the erection of one or more cottages for the housing of ministers and their families who may become tuberculous. The offer will also be extended to various secret societies and fraternal organizations in the state, or if preferred, churches or other organizations may have the privilege of endowing one or more beds in the attractive new building now being completed at the sanatorium.

PENNSYLVANIA

Must Take Additional Year.—A resolution was adopted recently by the Bureau of Medical Education and Licensure of Pennsylvania that graduates of all medical schools in the Dominion of Canada be required to take the final year in one of the Pennsylvania medical colleges and to qualify in the hospital intern year before being eligible to enter the Pennsylvania licensing examination. This action is similar to that taken in recent years by the licensing boards of certain Canadian provinces, affecting graduates of American medical schools.

Personal.—Dr. Jane Wells Craven, Pittsburgh, who is in charge of the Pittsburgh Field Hospital, sailed for Europe on the *Rochambeau*, March 4.——Dr. John C. Miller, Shenandoah, who has served for a year in Hungary and Russia with the American Red Cross unit, returned home, February 22.——Dr. John A. Fritchey, Harrisburg, underwent a fifth surgical operation at the Presbyterian Hospital, Philadelphia, February 25.——Dr. Daniel W. Collins, for seventeen years a member of the staff of Mercy Hospital, Wilkes-Barre, has resigned.——Dr. John B. Armstrong, Beaver, was operated on at the West Penn Hospital, Pittsburgh, recently, and is reported to be doing well.——Dr. Elmer S. Stambaugh, Thomasville, who has been critically ill, is reported to be slowly improving.——Dr. Frank S. Simpson, Pittsburgh, has been visiting in Pensacola, Fla.

Philadelphia

Smallpox in City.—Four cases of smallpox have been discovered within a week in different sections of the city. Nearly 4,000 people have been vaccinated. All were colored people, and in fact all the smallpox here in the last five years has been among colored people.

Memorial to Dr. Musson.—A special operating room for ear, nose and throat cases has been equipped by the graduates and friends of the Women's Medical College of Pennsylvania in memory of Dr. Emma E. Musson, who was the first female professor of otology.

Ambulance Oil Given to French Hospital.—The oil men of this city have temporarily at least saved the situation for the American patrons in the work of caring for the sick and wounded of the French army at the American Ambulance Hospital. One hundred barrels of oil were given by the Oil Trade Association of Philadelphia. The French government has given the oil, but lately has found it impossible to get a supply. There are 160 patients in the hospital.

Personal.—Dr. Clarence Rugh delivered an address before the Lawrence County Medical Society, February 18, on "Tuberculosis of Bones."——Dr. William J. Ryan has been appointed assistant ophthalmologist at the Philadelphia General Hospital.——Dr. Charles S. McGiven has been appointed clinical assistant physician to succeed Dr. Roy Parker, promoted.——Dr. Edwin W. Rodenheiser has been named assistant resident physician of the Bureau of Charities, to succeed Dr. Joseph McIver, resigned.

Medical Reserve Corps of the United States Army About Philadelphia.—A meeting was held at the College of Physicians' Building, on February 16, to form a permanent organization of those members of the Medical Reserve Corps of the United States Army residing in Philadelphia and the adjacent territory, including Pennsylvania and New Jersey. The organization will be conducted along the same lines as those which have been proved successful at other centers, including New York, Chicago and St. Louis.

John Thomson, the Physicians' Helper.—The death of John Thomson, city librarian, has brought sorrow to many members of the medical profession of this center, and especially to those in the Philadelphia County Medical Society, who are more especially interested in the value to doctor and patient of the "branch" plan. It was through the personal influence of Mr. Thomson that the directorate of the Free Library system of the city so promptly enabled the Kensington Branch to meet at the Lehigh and Sixth street building, the first section of the County Society to meet in one of the Carnegie library structures. The North, the West, the Germantown, the Southwark and Frankford branches came later.

Board of Health Plans Improvements.—The board of health, under the directorship of Dr. Wilmer Krusen, is determined to improve the Byberry tract and will make of it one of the best municipal hospital and institutional places of the country. The first improvement to be made there will be the completion of a heat and power plant, which will make available the buildings already erected for feebleminded women of child-bearing age. This plant is expected to be ready for use by August.——A contract has just been awarded for a sewage disposal plant at the Byberry tract, which will be constructed at an approximate cost of $18,000. The tract, which comprises nearly 1,000 acres, has suffered previously from a faulty water supply.——A new institution for insane men and women will be erected on the tract under the new health administration. The crowded condition of the Philadelphia General Hospital for the Insane has made the erection of new buildings imperative.——In connection with the study of insane persons at the Philadelphia General Hospital, Dr. Krusen has appointed four additional physicians to the neurologic department.——A campaign for the elimination of spitting in public places is also about to be started, and the police will be instructed to approach any person observed to have violated the statute and hand the offender a card containing a copy of the act against spitting.

WISCONSIN

Optometrists Seek School.—The optometrists of the state are said to be demanding the establishment of a department of optometry in the state university, Madison.

Personal.—Dr. Walter S. Stevens, U. S. I. S., agency physician at Keshena, has been appointed school physician at Mount Pleasant, Mich.——Dr. Norman F. Hoffman, formerly superintendent of the State Tuberculosis Sanatorium, Wales, has reopened his office in Milwaukee.

Typhoid in Milwaukee.—One hundred and seventy-seven cases of typhoid fever have been reported to the health department of Milwaukee, with eight deaths, up to February 28, and Health Commissioner Ruhland announces his intention of asking for general antityphoid inoculation unless the epidemic is checked.

VIRGINIA

License Tax for Doctors Defeated.—In the house of delegates, February 17, the bill fixing a tax of $10 on physicians was defeated by a vote of fifty-seven to twenty-four. The vote was on the engrossment of the bill and by refusing engrossment, the house defeated the bill and struck it from the calendar. There was formerly a tax of $15 a year on physicians, but this was repealed by the legislature in 1914.

Communicable Diseases.—Health Officer Ernest C. Levy, Richmond, states that in the opinion of the health department, an epidemic of measles has made its appearance among schoolchildren and is spreading rapidly. He urges all physicians to comply with the city ordinance and report all cases as soon as possible.——Several cases of smallpox have been reported in the northern part of Frederick County, and all schoolchildren have been ordered vaccinated.

CANADA

Hospital News.—The Queen's Canadian Hospital Aids is a club of girls organized for the purpose of raising funds and making surgical supplies for the Queen's Canadian Military Hospital, Beachborough Park, Shorncliffe, England. It is located in Toronto, but the hospital was organized in Kingston, Ont.——The Mount Sinai Sanatorium at Ste. Agathe, Que., treated ninety-eight tuberculous patients in 1915. Of that number forty-five were discharged cured, thirty-nine are still inmates, seven left uncured, and only seven died, five of the latter being old cases of long standing. The institution shows a deficit for the year of over $8,000, the expenses amounting to $25,850.——Although the increased cost of living advanced considerably in Ontario in 1915, the Stratford (Ont.) General Hospital reduced the per diem expenses of their institution by 12 cents. The average cost per patient per day was $1.50. There were 671 patients treated, 102 being free patients.

Personal.—Dr. John A. Blezard, Warkworth, Ont., has enlisted with the Royal Army Medical Corps and expects to go overseas at an early date.——Surg.-Gen. George A. Sterling Ryerson, Toronto, delivered an address before the Canadian Club, New York, February 8. As a result the club has presented a motor ambulance to the Canadian Red Cross Society.——Capt. C. E. Cooper Cole, formerly a practitioner in Toronto, who has been in France with No. 1 Clearing Hospital, then with No. 2, and was then transferred to the Princess Patricia Regiment, was reported to have been wounded on February 24.——Dr. Harry J. Watson, Winnipeg, has been appointed medical officer of the 144th Battalion. ——Hon. Dr. Robert A. Pyne, minister of education in Ontario, who has been in England for nine months superintending the erection and equipment of the Ontario Military Hospital at Orpington, Kent, is expected home this week.—— Dr. Howard Black, a house surgeon of the Toronto General Hospital, has been appointed assistant superintendent of that institution, vice Dr. Charles K. Clarke, resigned, to pursue postgraduate studies.

A National Department of Health.—Dr. Steele, M.P., North Oxford, Ont., introduced a resolution in the Canadian House of Commons last week expressing the greater need at the present time for a national department of health than at any previous time in the history of the Dominion. He pointed out that while all the provincial governments maintained well-organized health boards, the Dominion had the control of many matters relating to the health of the people distributed over eight or ten departments of the government. Practically every European nation, with one or two small exceptions, has organized national health departments, but Canada lags behind. He spoke of the progress made in the United States toward a department of health; also in Japan. There was urgent need for such a department in Canada, as at the close of the war there would in all probability be a greater influx of immigrants than ever before in the history of the country. He believed that 40 per cent. of the babies dying in Canada every year could be saved. It was promised by the government that the matter should receive due consideration. The Canadian Medical Association first began to urge a federal department of health on the Canadian government in 1901.

GENERAL

Typhus Investigator Dies.—Morris Buttner, a United States immigration inspector at El Paso, who had been searching for evidence of the presence of typhus fever in Juarez, Mexico, for twenty-four days and reported that no traces of the disease could be found there, died in El Paso, February 27, it is said from nonepidemic typhus fever.

The Virus of Rocky Mountain Spotted Fever.—Surg. Lunsford D. Fricks, U. S. P. H. S., in the current issue of *Public Health Reports*, states that he has been able, by the use of anaerobic methods, to cultivate from the blood of guinea-pigs infected with Rocky Mountain spotted fever certain bodies, probably of a protozoan nature, which he believes may bear some definite relationship to the disease.

Change Camp Dates to Accommodate Association.—In order to permit the attendance at the annual meeting of the American Medical Association at Detroit, June 12 to 16, of those officers of the medical corps of the organized militia who desire to attend, the days previously set for camp of instruction of medical officers and noncommissioned officers of the organized militia have been changed from June 5 to 15 to June 19 to 29 by the Chief of the Division of Militia Affairs.

Life Insurance Directors Elect Officers.—At the sixth annual meeting of the medical section of the American Life Convention, held in Birmingham, Ala., March 1 to 3, the following officers were elected: Dr. Frank W. Foxworthy, Indianapolis, chairman; Dr. J. Pinkney Turner, Greensboro, N. C., vice chairman, and Dr. Frank L. B. Jenney, Chicago, secretary (reelected). Drs. Green V. Woollen, Indianapolis, and Charles N. McCloud, St. Paul, were elected members of the board of managers.

Missouri Valley Physicians Meet.—The twenty-eighth semiannual meeting of the Medical Society of the Missouri Valley will be held in St. Joseph, Mo., March 23 and 24, under the presidency of Dr. John P. Lord, Omaha. Dr. Floyd H. Spencer is chairman of the committee of arrangements. On the first day there will be a symposium on "Diseases of the Knee Joint" and on the second day one on "Syphilis." The banquet will be held on the evening of the first day, when the members will be guests of the Buchanan County Medical Society.

The Journal of Immunology.—The first issue of the *Journal of Immunology*, the official organ for serology and hematology, and the American Association of Immunologists, has just appeared. It contains articles by Drs. Richard Weil, J. A. Kolmer, Frederick P. Gay, Ruth L. Stone, T. Harris Boughton, F. Berry and C. O. Melick, as well as an abstract of the Proceedings of the Society for Serology and Hematology, New York. The journal is to be issued monthly. The editor is Dr. Arthur F. Coca, 8 West Sixteenth Street, New York City.

Army Medical School to Have Charge of Washington Asylum and Jail.—The transfer of the supervision and direction of the medical service of the Washington Asylum and Jail, in the District of Columbia, from the board of charities to the commandant of the Army Medical School is provided for in a bill recently introduced into Congress by Senator Hollis of New Hampshire. The Washington Asylum is substantially the city hospital for the District of Columbia and has approximately 250 beds. The apparent purpose of the bill is to enable the students in attendance at the Army Medical School to obtain clinical instruction.

Admission to Mails of Medicinal Preparations Containing Poisons.—The admission to the domestic mails of medicinal preparations which contain poisons in only sufficient quantity and form in combination with other ingredients to be used exclusively as curative or remedial substances, and which are not dangerous or injurious to life, safety, health or property, is proposed in a bill recently introduced into the house of representatives by Representative Griffin of New York. The article mailed is to bear the label or superscription of the manufacturer thereof or dealer therein, or of the licensed physician, pharmacist, dentist or veterinarian preparing or prescribing the same.

Army Medical School Lacks Adequate Facilities. — Impressed by the work of the Army Medical School and the inadequacy of the facilities provided for that work, Drs. John M. T. Finney and Joseph C. Bloodgood of Baltimore recently left with the president the following memorandum:

> We are so impressed by the character and importance of the scientific work which is being done there we feel the need of bringing to the attention of yourself and the country the utterly inadequate facilities provided not only for purposes of investigation, but for those of instruction as well. The quarters are unsuited for existing conditions and they will prove still more so in case of any expansion of the service.
>
> We furthermore, from our experience as teachers, believe that the Army Medical School should be in the vicinity of, and closely affiliated with, the newly established Walter Reed Hospital for the benefit of both institutions.

Investigation of the Dairy Industry.—Reciting that dairies and dairy products are not subject to federal inspection and that there is a growing sense of alarm among consumers,

a resolution introduced into Congress by Representative Linthicum of Maryland calls for the appointment by the speaker of the house of representatives of a committee of five members of the house to investigate and report as soon as practicable: (*a*) whether conditions prevailing in dairies and dairy products seriously menace the health and property of the people of the United States; (*b*) whether federal inspection and supervision, either alone or in cooperation with state and municipal inspection and supervision is necessary to the reasonable protection of the health and property of the citizens of the United States, and (*c*) if so, then the best and most economic methods of inaugurating and enforcing such inspection and supervision.

Once More a Warning.—THE JOURNAL reproduces here what is stated to be an official receipt issued by an agent who solicits subscriptions for various publications for which he is not an authorized agent. THE JOURNAL has been informed that an investigation made in Richmond, Va., revealed the fact that there is no United Students' Aid Society in that place. In fact, the room numbers printed on the receipt blank are higher than those actually existing in the building. This scheme resembles to some extent that described in THE

OFFICIAL RECEIPT No. 4188

United Students' Aid Society

ASSOCIATED WITH

Publishers' Association of America

625-630 TRAVELER'S BLDG. RICHMOND, VA.

H. R. RICKER, Pres. — L. N. POST, Treas. — W. R. PAYNE, Sec.

DIRECTORS

Y. S. WESTON — W. R. WILSON — J. W. HICKEY

$ 7.00 ..... Mch 1916

Mr. M ..... has this day

paid Seven ..... Dollars, in full payment for One years subscription to the following journals or periodicals.

1. C ..... To begin Year July

2. C ..... To begin 15 to July 1916.

3 ..... To begin at the headquarters

4 ..... To begin .....

The same constituting Twelve votes.

UNITED STUDENTS AID SOCIETY

Per ..... Contestant

JOURNAL, Sept. 4, 1915, p. 888; Oct. 23, 1915, p. 1472, and Nov. 20, 1915, pp. 1825 and 1827. As the name of the so-called "Students' Aid Society" has been changed, though not the method of obtaining subscriptions, physicians are again warned concerning this scheme. Money should not be paid to any one claiming to represent the American Medical Association unless he carries credentials bearing the signature of the Editor and General Manager and the seal of the Association.

Camps of Instruction for Medical Officers.—Maj. Louis T. Hess, M. C., U. S. Army, assistant to the Chief of the Division of Militia Affairs, announces the plans of the division for instruction of medical officers and noncommissioned officers of the organized militia and officers of the Medical Reserve Corps, U. S. Army, inactive list, for the summer, providing Congress makes the necessary appropriations. The camps will be located at Tobyhanna, Pa., Anniston, Ala., Sparta, Wis., Fort Riley, Kan., and Monterey, Calif. The pay, transportation and subsistence of enlisted men will be defrayed by funds allotted to the states from the appropriations for the organized militia. Officers of the Medical Reserve Corps will attend the camp at their own charges, as no provision of law is made whereby they can receive pay or transportation from federal funds. Officers, noncommissioned officers, and sanitary units of the organized militia will be ordered to the schools on the recommendation of the adjutants general of the various states and of the District of Columbia. At the Tobyhanna, Pa., camp, the organized militia school will be in session from June 19 to 29; the joint camp from June 29 to August 20, and that for the Medical Reserve Corps from August 21 to 31. At this camp the fifth, sixth, seventh and eight militia divisions will assemble. At the Anniston, Ala., camp, the ninth and tenth militia divisions will receive instruction. The period from July 31 to August 10 will be devoted to the militia and Medical Reserve Corps and a joint camp from August 14 to September 14. At Sparta, Wis., the organized militia will assemble from June 19 to 29; there will be a joint camp from June 29 to August 10, and the Medical Reserve Corps will receive instruction from August 14 to 24. This camp will include the eleventh, twelfth and thirteenth militia divisions. The Fort Riley, Kan., camp, at which the fourteenth and fifteenth militia divisions will assemble, will be opened for the instruction of the organized militia and the Medical Reserve Corps from June 19 to 29, and there will be a joint camp from June 15 to July 16. The sixteenth militia division will receive its instruction at Monterey, Calif. The school for the organized militia and Medical Reserve Corps will be held from July 17 to 27, and the joint camp from August 1 to 11.

WAR NOTES

Medical Unit Sails for Germany.—The third medical relief unit for Germany sent out by the American Physicians' Expedition Committee, Arthur von Briesen, New York, chairman, sailed on the *Oscar II*, February 17. Three surgeons sailed with this unit; two more will leave in a few days.

Germany Prohibits Certain Imports.—According to *Commerce Reports*, an ordinance, published Feb. 26, 1916, in Berlin, prohibits, until further notice, the importation into Germany of certain articles of luxury. Among the large number of articles specified are certain fruits, champagne, certain clothing, furriers' goods, machinery and tools, including typewriters, adding machines and sewing machines.

LONDON LETTER

LONDON, Feb. 14, 1916.

The War

THE HEALTH OF WOMEN SHELL MAKERS

The wholesale withdrawal of men from industries to military service has resulted in the employment of women in industrial occupations on a huge scale. The government has made every provision to safeguard the health of the large number engaged in munition work. A health and munition workers' committee consisting of medical experts and philanthropic persons has just issued a report on the question of the health of the women engaged in shell making. It is pointed out that the increased output which leads to bad health, and so to much lower output, is no economy. The matter is dealt with under five headings. Of these the period of employment is fully considered and the effect of night work examined critically. Night work is perhaps a necessary evil at present. The committee calls for improved means of transit to and from work, and also urges that when possible the three shift system should be adopted. A portion of Saturday and the whole of Sunday should be reserved for rest, and the periodic factory holiday should not be omitted. Canteens should be opened at every change of shift, and seats with backs provided, the extra expense being fully compensated for by the extra comfort and so by the extra efficiency. Cloakrooms and drying rooms for wet weather, and working overalls also make for comfort. In all cases forewomen, nurses and welfare supervisors should if possible be appointed, and a trained nurse should always be available where there is liability to accident or a large number of workers. Overtime, it appears, must continue, but requires to be made subject to restrictions. These cannot well be formulated till a trial of restricted Sunday work has been made. The following recommendations are formulated as suitable to war conditions:

1. The average weekly hours (exclusive of meal times) should not exceed from sixty-five to sixty-seven, including overtime. Hours in excess of sixty-five should be worked for only short periods, and to meet sudden and unexpected circumstances. It may be desirable to differentiate to some extent between different kinds of work, and to fix a rather lower limit of hours for work requiring individual attention.

2. Where practicable the overtime should be concentrated within three or four days in the week, which should preferably not be consecutive.

3. When overtime is worked it is specially important that there should be no Sunday work.

4. The practice prevailing in certain districts of working from Friday morning, all through Friday night, and until noon on Saturday should be discontinued. Such hours may be permissible for short spells, but cannot be satisfactory from the point of view either of health or of output, if continued for indefinite periods.

Antiseptics from Sea Water

The electrolytic decomposition of sea water yields sodium hypochlorite, which is a powerful antiseptic, at a very small

cost. This fact has been turned to account in the disinfection of hospital ships, which are so largely used by us in the war, by means of an apparatus recently installed in the *Aquitania* under the supervision of Dr. Dakin, and at the instance of the medical research committee of the national insurance act. The apparatus consists of an electrolytic cell, a reversing switch capable of carrying 100 amperes, and some ordinary insulated electric cable. The cost is about $250. The cell stands on a rubber mat to insulate it, and is raised on a low table to enable its contents to be poured out easily. It is filled with cold sea water, and if a current of from 60 to 75 amperes at 110 volts is then turned on, a solution containing 2 parts of sodium hypochlorite or available chlorin to 1,000 parts will be obtained in five minutes. The cost of this solution works out at 6 cents per hundred gallons. The solution is also excellent as a sterilizer of drinking water (1 part chlorin to 1,000,000 parts), and as an antiseptic for wounds (used undiluted as produced by the electrolyzer, that is, 2 parts sodium hypochlorite to 1,000 parts). Further, in the butcher's department its value was soon evident, and also in the laundry for soaking undyed cotton and linen goods. It was added to the water in the swimming bath of the ship in the proportion of 1:2,000,000, with the result that bacteria present to the number of 2,000 per cubic centimeter were reduced to 200. The economy in replacing expensive coal-tar disinfectants, such as phenol (carbolic acid), by electrolytic hypochlorite will approximately pay for the cost of the cell ($250) in the course of a single trip of three weeks.

An Outbreak of Diarrhea Due to Pollution of Public Water Supply

An extensive outbreak of diarrhea affecting 1,700 persons in a rural district of Derbyshire has been traced to an unusual cause—sewage contamination of the public water supply. At first the outbreak was puzzling. It was thought that the symptoms might be due to the gastro-enteric form of influenza or to food poisoning. The large number of persons simultaneously attacked rendered the former hypothesis unlikely, while, were the latter to be entertained, it was obvious that some article of almost universal consumption would require to have been inculpated, and no food used locally was found to be so consumed. Careful inquiry excluded milk, shellfish and other articles of food as possible causes of the outbreak. Finally, suspicion fell on the water supply, as the vast majority of persons attacked by diarrhea resided in the two parishes, while the inhabitants of other parts of the district were practically exempt. The two parishes have a common water supply, distinct from that of the remainder of the district. It was found on bacteriologic examination that while the water in the reservoir was free from *Bacillus coli*, water drawn from household taps in the affected parishes contained that organism. It was therefore conjectured that sewage had gained entrance to the water main at a point between the reservoir and the boundary of the affected district. The epidemic commenced in the first week of March, and was at its height in the third week, after which it declined. March 19, a sewer which crosses over the main conveying water from the reservoir to the affected area was found to be broken for a distance of 16 feet, and had apparently been in this condition for a considerable period, as sewage was intimately mixed with the surrounding clay. The water supply throughout the whole of the two affected parishes was cut off for two days, and the repair of the sewer coupled with the cutting off of the water brought the epidemic practically to an end. No defect could be found in the water main, but in a by-pass connecting the inlet of the reservoir with the outlet main, a hole was discovered only 2 feet distant from one of the broken pipes of the sewer.

The onset of the attack was generally sudden and accompanied by headache, nausea, pains in the abdomen and back, cramps in the leg, and diarrhea. The patients often complained of "shivers" or rigors in the early stages. In mild cases the diarrhea lasted for one day, but in the severe cases it persisted for a longer period and was profuse and frequent, a condition amounting to collapse being produced. Sometimes these symptoms were succeeded by lassitude and headache accompanied by depression. As a rule, the symptoms persisted for a period ranging from ten days to a fortnight, during which the patient felt disinclined for work. The spleen and liver were not palpable. No spots were observed. In the chest the signs appeared normal. During the period of the outbreak six cases of typhoid fever were reported, but it is probable that only four of these patients had the disease. The results of bacteriologic examination were not very definite. Specimens of feces in twelve cases were examined. The typhoid bacillus was isolated in two, the typhoid bacillus and the dysentery bacillus Y in one, the dysentery bacillus Y alone in one, while the remaining eight were found negative for typhoid and dysentery. Specimens of urine from seven patients were examined and all found sterile. The blood in thirteen cases was investigated: twelve of these gave a typhoid Widal and a dysentery Widal, while one gave a typhoid Widal alone.

PARIS LETTER

PARIS, Feb. 10, 1916.

The War

THE SANITATION OF BATTLEFIELDS

As I have mentioned in previous letters, the solution of this problem is occupying the attention of many men. Cremation, which has been suggested, is distasteful to many persons in France. Dr. F. Bordas advises instead accelerated decomposition of corpses, which will permit the ultimate removal of the bones without danger to the living. In the "Study of Putrefaction," which Dr. Bordas published in 1892, he noted the extreme variability of the time required for decomposition. Almost each cemetery has its own peculiarities due to its geologic characteristics. In some cemeteries, like the Campo Santo of Pisa, bodies decompose rapidly, a fact which is attributed to the alkalinity of the soil. In others, like that of Saint Nazaire, the soil of which is compact clay formed from disintegrated mica schists, which retains the water permanently, decomposition is so slow that bodies have been found intact five years after burial. In dry, sandy soils, on the other hand, the corpse mummifies as it does in the dry cold air of Saint Bernard. The endeavor, then, should be to realize the conditions which favor decomposition. Bordas describes some interesting experiments in the *Revue d'hygiène*. Using bodies of animals, he ascertained that the germs and ferments of manure act rapidly and powerfully to produce decomposition. Obviously, however, manure cannot be used to accelerate the decomposition of the human body. Bordas therefore made an analytic study of the principal species of bacteria found in manure, and found that one group of ferments of manure has particularly powerful action, that of the ferments of urea. Bordas placed the body of a horse in a trench on a bed of straw and covered it with straw sprinkled with a culture of urea ferments. In twenty-one days nothing remained of the body except the bones. This transformation would have required three or four years in earth under ordinary conditions. To apply these experimental data to human bodies, Bordas says it would be necessary to place in a trench a layer of straw or leaves, to lay the bodies on this bed of straw and to cover them with a layer of straw or leaves moistened with the appropriate bacterial culture. Earth should not be laid on top of the straw; it would disturb the processes of decomposition, and it is not necessary, for no malodorous gases are disengaged during decomposition under these conditions. In a few weeks or months, at the most, nothing but bones would remain and burial might be made without the least danger to the living.

SANITARY CONFERENCE AMONG THE ALLIES

The allies, after having shared their experiences in regard to the conduct of war, the manufacture of munitions, etc., have concluded that the same thing should be done with respect to matters of prophylaxis, either among the civilian population or among the armies in the field. A sanitary conference, to which the allied nations are to send delegates, has therefore been decided on. A preliminary meeting of the French delegates took place under the presidency of M. Santoliquido, the Italian hygienist, at the office international d'hygiène at Paris. At this meeting the principal points to be discussed at the conference were agreed on.

THE COORDINATION OF ASSISTANCE TO THE ARMIES OF THE ORIENT

Under the authorization of the military medical service, offices have been opened at 62 Rue de Richelieu, Paris, by an organization intended to coordinate the aid sent to the armies of the Orient, and to centralize the distribution of gifts. Under the auspices of the central administration of the war, these donations will be distributed where needs are most pressing. The work of this bureau will include not only the soldiers of our expedition to the Orient and the Serbian army at Corfu, but also the Serbian women, children and old men who have taken refuge in Albania and Greece.

THE SOCIETY FOR THE BENEFIT OF THE MILITARY HOSPITALS

A new association, called Pour les Hôpitaux militaires, has just been formed. The purpose is to gather and distribute gifts to the hospitals in which soldiers from our armies are being treated. The headquarters of the society are at 131 Avenue des Champs-Elysées, Hotel Astoria, Paris, and the president is Mme. la marquise de Noailles, who is assisted by M. Henry Soulié as a general delegate from the war department.

DELAYED TETANUS

At a recent session of the Académie des sciences, Dr. P. Bazy made an interesting report on this subject. Delayed tetanus may occur from thirty to fifty days after the wound which is regarded as the cause; the patient may or may not have received a preventive injection of serum. The tetanus may appear without any appreciable cause, but it manifests itself especially following operations, not necessarily on the site of the original wound or in any way affecting it, as well as when the wound displays inflammatory symptoms again. Delayed tetanus is very serious, for death has been observed in one third of one series of cases and in one half of another. The lesson to be drawn from these facts is that it is not sufficient to make a single injection of preventive serum immediately after the wound, but that in all cases of suppurating wounds the injection should be repeated every eight days for about a month and again before any serious operation.

CLINICAL IMPORTANCE OF SOME TROPHIC DISTURBANCES IN THE COURSE OF WOUNDS OF WAR AFFECTING THE NERVES OF THE LIMBS

Dr. Maurice Villaret read a paper on this subject before the Société de neurologie de Paris. From a study of 119 personal cases of posttraumatic paralyses of the limbs, he concludes that hypotrichosis and spontaneous hypohidrosis are, like the reaction of degeneration, signs of complete section of the nerve. Hypertrichosis and hyperhidrosis correspond to an incomplete lesion of the nerve susceptible of regression and accompanied by light disturbances of the electric reactions. The absence of any modification of the hair and spontaneous perspiration is a characteristic of functional impotence without nervous lesion and with negative electrical reactions. Villaret also emphasizes two trophic disturbances which are symptomatic of serious neuritis: these are bleeding from a prick and ulceration following prolonged galvanization.

OPENING OF THE FRENCH HOSPITAL AT MILAN

In previous letters (THE JOURNAL, Oct. 9, 1915, p. 1296, and Oct. 23, 1915, p. 1474), I mentioned that French cities had offered a hospital to the Italian Red Cross. This hospital has just been opened at Milan, in the buildings of the Ricordi factory, in the presence of Italian and French persons of distinction.

THE ACTIVITY OF THE SOCIETY FOR AID TO WOUNDED SOLDIERS

From Aug. 2, 1914, the first day of mobilization, to Jan. 1, 1916, the Société Française de secours aux blessés militaires, one of the three societies which make up the French Red Cross, has operated 796 hospitals containing 67,081 beds. It has fitted up a large transatlantic liner, the *Charles Roux*, as a surgical hospital and has sent it to the Orient. It is now organizing at Saloniki a large hospital of 500 beds. Besides its 796 hospitals, the society supports 930 first-aid posts, 70 railway station infirmaries, which feed the sick and wounded on trains passing through, and which have distributed more than 5,000,000 meals, and 45 railway station canteens, a single one of which has distributed 226,900 meals since the outbreak of the war. The graduate nurses of the society number 15,000, about 3,000 of which are serving in the military hospitals. The activities of the society have necessitated the large outlay of 32,114,000 francs ($6,422,800) which has been distributed as follows: (1) hospitals, medicines and dressings, 26,071,000 francs ($5,214,200); (2) railway station infirmaries, first-aid posts, canteens, 3,540,000 francs ($708,000); (3) contributions for various purposes, 264,000 francs ($52,800); (4) automobiles (construction and upkeep), 939,000 francs ($187,800); (5) sent to the hospitals at the front, 1,300,000 francs ($260,000).

PERSONAL

Among those recently mentioned for conspicuous gallantry is Dr. Albert Thevenot, agrégé professor at the Faculté de médecine de Lyon, in the following terms: "An experienced surgeon, charged with the treatment of the wounded who could not be removed from near the front, he was able, by his ingenuity and the most commendable utilization of local resources, to adapt to the exigencies of modern practice such quarters as happened to be available, and to accomplish with success the most daring and delicate surgical operations, obtaining for the seriously wounded the best chances of safety and preserving seriously endangered lives."

The *Journal Officiel* publishes also the following mention for gallant conduct in civil life: "The government brings to the attention of the country the fine conduct of M. Samsoen, physician at Hazebrouck (département du Nord), who was the only physician remaining after mobilization in a population of 12,000, and within a considerable radius. He rendered medical service day and night without neglect or ceasing. He added to the medical care given to the population the organization of a free dispensary for refugees. With unwearying devotion, beyond all praise, he cared for those members of the civilian population who were wounded by bombs and shells and for the aged and sick and for the obstetric cases brought from the arrondissement of Hazebrouck, from the canton of Armentières, and from the Belgian cities Poperinghe and Ypres."

SANATORIUMS FOR TUBERCULOUS SOLDIERS

The undersecretary for the military medical service has just announced that, by agreement between the war department and the interior department, the latter will receive in special establishments called *stations sanitaires*, for a period of not more than three months, noncommissioned officers and soldiers affected with open pulmonary tuberculosis. The head physicians of hospitals are to select patients who have not sufficient means to provide suitably for themselves at their own expense. They are never to include patients whose condition is so serious that improvement under favorable conditions cannot be expected. The *stations sanitaires* are not hospitals, properly speaking. They are unable to receive cases requiring special care, or those in which the lesions are already so extensive and so far advanced that a fatal issue is inevitable within a short time. Neither are the men who are recognized as tuberculous on their arrival in the corps to be sent to these resorts; the latter are to be discharged immediately.

The request for admission to a *station sanitaire* is to be addressed to the director of the medical service of the region, and transmitted by him to the interior department. The interior department will inform the director of the medical service of the region, by telegraph, of the resort to which the patient may be sent and the date when he may be admitted. The patient is to be discharged from the army when, in the head physician's judgment, his stay at the sanatorium has been sufficiently prolonged, and in any case not longer than three months after his arrival.

Soldiers affected with open pulmonary tuberculosis who have already been discharged from the service, but are still under treatment in a military hospital, may, if they consent, be suggested for transfer to a *station sanitaire*, but their admission there will not be at the expense of the war department.

Death of Dr. Thulié

Dr. H. Thulié, former president of the municipal council of Paris and vice president of the superior council of the Assistance Publique, has just died, aged 84.

Marriages

GEORGE WALWORTH MELLON, M.D., Philadelphia, on duty with American Red Cross in Serbia, to Miss Zagorka D. Sabo of Belgrade, Serbia, at Athens, Greece, January 23.

WALTER F. PAYNE, M.D., Prairie Creek, Ind., to Miss Panzy Lawson of Sullivan, Ind., at Terre Haute, Ind., February 20.

JACK W. BROWN, M.D., Las Animas, Colo., to Mrs. Mabel B. Hager of Eaton, Colo., at Pueblo, Colo., February 21.

JOSEPH P. KENNEDY, M.D., Columbia, Pa., to Miss Lillian F. Wardell of Toronto, Ont., at Columbia, February 22.

WILLIAM RUSSELL MACAUSLAND, M.D., Boston, to Miss Dorothy Brayton of Fall River, Mass., February 23.

FREDERICK KIRSCHENBAUM, M.D., Bensonhurst, N. Y., to Miss Lena B. Miller of Brooklyn, recently.

Deaths

George Lane Taneyhill, M.D., Baltimore; University of Maryland, Baltimore, 1865, aged 75; a Fellow of the American Medical Association; formerly president of the Baltimore City Medical Society; vice president of the Obstetrical and Gynecological Society of Baltimore; assistant surgeon of the Eleventh Maryland Volunteer Infantry during the Civil War; major, Medical Corps, Sixth Infantry, Maryland National Guard (retired); formerly president of the National Association of United States Pension Examining Surgeons; one of the most beloved practitioners of Baltimore; died at his home, March 2, from heart disease.

Angelo Maestri, M.D., New Orleans; Tulane University, New Orleans, 1895; aged 45; a Fellow of the American Medical Association and one of the best known practitioners and citizens of New Orleans, who was given a medal of honor by the king of Italy on account of his services to Italian subjects during an epidemic of yellow fever in New Orleans; organizer and head physician of the Citizens' Industrial Life and Sick Benefit Association; died at his home, February 18.

Thomas Boyd Morris, M.D., Atlantic, Iowa; Rush Medical College, 1900; aged 49; a Fellow of the American Medical Association and once president of the Cass County Medical Society; a well-known surgeon; secretary of the Atlantic Hospital Association; while crossing the tracks of the Chicago and Northwestern Railroad east of Atlantic, in his automobile, February 17, was struck by a train and died from his injuries in the Atlantic Hospital, February 19.

Henry Brydges Yates, M.D., Montreal, Que.; McGill University, Montreal, 1893; aged 50; for several years Norwegian consul-general at Montreal and president of the Quebec branch of the Canadian Red Cross Society; lieutenant-colonel, Canadian Army Medical Corps, and on duty at the Third Canadian General Hospital at the front; died in the Granville Special Canadian Hospital, Ramsgate, England, January 22, from pneumonia.

William C. Bouton, M.D., Waukegan, Ill.; Northwestern University Medical School, 1889; aged 50; formerly a Fellow of the American Medical Association; a Fellow of the American Academy of Medicine, a member of the Illinois State Medical Society and formerly president of the Lake County (Ill.) Medical Society; secretary of the Lake County Tuberculosis Institute; died at his home in Waukegan, March 1, from paralysis.

William John Browning, M.D., Indianapolis; Medical College of Indiana, Indianapolis, 1884; aged 62; formerly assistant superintendent of the Central Hospital for the Insane and formerly a member of the Indianapolis Board of Health; died at his home, February 23, from the effects of hydrocyanic acid, self-administered, it is believed, with suicidal intent, while despondent on account of ill health.

Charles Winthrop Williams, M.D., Minneapolis; Northwestern University Medical School, 1891; aged 52; formerly a Fellow of the American Medical Association; a member of the Minnesota State Medical Association; professor of materia medica and therapeutics in Hamline University, Minneapolis; died at his home, February 23.

J. McKendree Kemp, M.D., Welcome, Md.; University of Maryland, Baltimore, 1863; aged 79; surgeon in the Federal service during the Civil War and thereafter a practitioner of the Western Shore, Maryland; died in Johns Hopkins Hospital, February 18, from heart disease following the amputation of the right leg.

Edson B. Morrison, M.D., Athens, Ohio; Starling Medical College, Columbus, Ohio, 1881; aged 55; for the last two years a resident of San Pedro, Isle of Pines, W. I., and for many years prior to that time resident physician at the Ohio Hospital for Epileptics, Gallipolis; died at his home in Athens, February 23.

Allen Walker, M.D., Washington, D.C.; University of Maryland, 1886; aged 63; a member of the Medical Society of the District of Columbia and formerly one of the physicians to the poor of the District of Columbia; died at his home in Washington, February 21, from pernicious anemia.

Milton Edward Baxter, M.D., Jersey City, N. J.; Jefferson Medical College, 1909; aged 34; a Fellow of the American Medical Association; a member of the consulting staff of Christ's Hospital and of the Hudson Street Hospital, Jersey City; died at his home, February 22, from pneumonia.

Samuel H. Linn, M.D., Rochester, N. Y.; University of Pennsylvania, Philadelphia, 1877; aged 72; a veteran of the Civil War in which he served in the Navy; for eighteen years a practitioner of dentistry in St. Petersburg, Russia, and thereafter a resident of Rochester; died at his home, February 26.

George W. Smith, M.D., Fort Smith, Ark.; Tulane University, New Orleans, 1867; aged 74; surgeon in the Confederate service throughout the Civil War and later a practitioner and druggist of Alma, Ark.; died at his home, February 20, from cerebral hemorrhage.

Buckner Fairfax Scott, M.D., Terra Alta., W. Va.; Jefferson Medical College, 1906; aged 36; a member of the West Virginia State Medical Association; a veteran of the Spanish-American War; postmaster of Terra Alta; died suddenly at his home, February 21.

Thomas Shearer, M.D., Baltimore; Homeopathic Medical College of Pennsylvania, Philadelphia, 1858; aged 90; formerly a practitioner of Charleston, S. C., and surgeon in the Confederate service throughout the Civil War; died at his home, February 18.

Daniel Burr Stone, M.D., Kramer, Ind.; Chicago College of Medicine and Surgery, 1913; aged 33; pathologist of the Mudlavia Sanitarium; died in that institution, February 22, from burns received in an explosion of alcohol in his laboratory a week before.

Ralph William Hill, M.D., Garrisonville, Va.; Milwaukee Medical College, 1908; aged 32; formerly a member of the Medical Society of Virginia; died in the Mary Washington Hospital, Fredericksburg, Va., February 20, a week after a surgical operation.

Winfield Scott Madden, M.D., Altoona, Pa.; Jefferson Medical College, 1876; aged 65; who had been ill with nephritis for several years; died in the Blair County Home Hospital, Altoona, February 14, from erysipelas of the right leg and thigh.

Theodore Keune, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1878; aged 63; a Fellow of the American Medical Association and for fifteen years visiting physician to Harlem Hospital; died at his home, February 26.

William Ludy Baird, M.D., Huntsville, Tex.; University of Louisville, 1885; aged 58; for several years cashier of the Rockdale State Bank and for the last year head bookkeeper of the Huntsville Penitentiary; died at his home, February 17.

Oliver P. Kernodle, M.D., Skiatook, Okla.; University Medical College, Kansas City, Mo., 1884; aged 57; who had taken a trip to Arizona for his health and was returning; died in a hospital in Oklahoma City, February 17, from tuberculosis.

Benjamin W. Phillips, M.D., Leeper, Pa.; Western Reserve University, Cleveland, 1876; aged 61; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; died at his home, February 8.

William Hammond Eaton, M.D., Adrian, Minn.; State University of Iowa, Iowa City, 1902; aged 37; a member of the Iowa State Medical Society; while cranking his automobile, February 25, was run over by the car and instantly killed.

Willis A. Mirick, M.D., Monticello, Iowa; Hahnemann Medical College, Chicago, 1878; aged 61; a member of the Iowa State Medical Society; died suddenly from heart disease while making a professional call in Monticello, March 1.

William Byron McCoy, M.D., Lincoln, Neb.; Chicago College of Medicine and Surgery, 1914; aged 37; died at his former home in College View, Neb., February 21, from pneumonia, following a tracheotomy performed four days before.

William R. Lavender, M.D., Omaha; University of Nebraska, Omaha, 1890; aged 60; a Fellow of the American Medical Association and a well known practitioner of Omaha for the last twenty-five years; died at his home, February 28.

John A. Dowell, M.D., Albany, Ind.; Eclectic Medical Institute, Cincinnati, 1881; aged 58; while walking across the tracks of the Lake Erie and Western road at Albany, February 19, was struck by a train and instantly killed.

John H. Shultz, M.D., Logansport, Ind.; Eclectic Medical Institute, Cincinnati, 1872; aged 73; a veteran of the Civil War and deputy treasurer of Cass County, Ind., from 1868 to 1872; died at his home in Logansport, February 24.

Eugene Harold Brice, Jr., M.D., Atlanta, Ga.; Atlanta Medical College, 1915; aged 25; surgeon on the steamer *Stephen* of the Booth Steamship Line in its South American service; died February 13, and was buried at sea.

Thomas Feemster, M.D., Santa Cruz, Calif.; American Medical College, St. Louis, 1882; St. Louis College of Physicians and Surgeons, 1895; aged 65; died at his home, Dec. 14, 1915, from carcinoma of the stomach and liver.

John J. Detwiller, M.D., Easton, Pa.; University of Pennsylvania, Philadelphia, 1854; aged 81; a pioneer in the development of the slate and cement industries of Pennsylvania; died at his home, February 29.

David Allyn Gorton, M.D., Brooklyn, N. Y.; Hygieo-Therapeutic College of New York, New York City, 1858; aged 83; founder of the Eugenic Society of America; died at his home, February 23, from senile debility.

William Harrison Lenox, Rogers, Ark. (license Arkansas, 1903); aged 78; a veteran of the Civil War and for half a century a practitioner of Arkansas; died at the home of his daughter in Little Rock, Ark., February 22.

Loomis C. Blanton, M.D., Louisville, Ky.; Hospital College of Medicine, Louisville, 1906; aged 32; deputy coroner of Jefferson County in 1908 and 1909; died at his home near Blanton's Station, Louisville, February 21.

Stephen Hadley Steele, M.D., Caruthersville, Mo.; University of Pennsylvania, Philadelphia, 1854; aged 85; surgeon in the Confederate service during the Civil War; died at his home, February 17, from influenza.

Mary Elizabeth Newcomb Law, M.D., Windsor, Colo.; University of Michigan, Ann Arbor, 1890; aged 61; for many years a practitioner of Blissfield, Mich.; died at her home, February 9, from cerebral hemorrhage.

Frank Wilmont Morse, M.D., Thorndike, Me.; University of the South, Sewanee, Tenn., 1903; aged 35; a Fellow of the American Medical Association; died at his home, February 6, from pleurisy with effusion.

Elijah Davis Arnet, M.D., Robard, Ky.; University of Louisville, Ky., 1894; aged 68; formerly a member of the Kentucky State Medical Association; died at his home, February 15, from pneumonia.

M. W. Smith, M.D., Gaffney, S. C.; Medical College of the State of South Carolina, Charleston, 1861; aged 80; a surgeon in the Confederate service during the Civil War; died at his home, February 7.

John Christian Modrack, M.D., Hastings, Mich.; Starling Medical College, Columbus, Ohio, 1882; aged 68; died in the Marion County Infirmary, Marion, Ohio, February 13, from cerebral hemorrhage.

Benjamin Franklin Richardson, M.D., Lynn, Mass.; Harvard Medical School, 1886; aged 52; a Fellow of the American Medical Association; died at his home, February 16, from endocarditis.

Ambrose M. Keim, M.D., Bethlehem, Pa.; Jefferson Medical College, 1877; aged 61; coroner of Northampton County, Pa., for twelve years; died at his home, February 14, from heart disease.

Charles Wheeler Morse, M.D., Salem, Mass.; Boston University School of Medicine, 1889; aged 59; chief surgeon of the Essex County Homeopathic Hospital; died at his home, February 14.

George S. Engler, M.D., Allentown, Pa.; University of Pennsylvania, Philadelphia, 1863; aged 81; surgeon of the Rush Lancers during the Civil War; died at his home, February 12.

Henry Ford, Paducah, Ky. (license, Kentucky, thirty years' practice and examination, 1894); aged 80; died at the home of his granddaughter in Puducah, February 18, from senile debility.

John Phillip Miller, M.D., Enterprise, Kan.; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1888; died at his home, January 6, from acute bronchitis.

Chesley R. Roadman, M.D., Rankin Depot, Tenn.; Lincoln Memorial University, Knoxville, Tenn., 1892; aged 56; died at his home, February 18, from cerebral hemorrhage.

Richard H. Hanchey, M.D., Sugartown, La.; Baylor University, Dallas, Texas, 1906; aged 40; was shot and killed at his home by his stepson, in a quarrel, February 15.

Edgar C. Davis, M.D., St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1904; aged 53; died at the home of his daughter in Chicago, February 14.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

COLLOIDINE

Report of the Council on Pharmacy and Chemistry

The following report on Colloidine has been adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

This preparation, manufactured by A. Dubois, Paris, France, and marketed in the United States by the Boracol Chemical Company, Passaic, N. J., is described as

"A Colloidal Vegetable Iodine Combination."

Colloidine is sold in the form of tablets said to contain each ⅓ grain of iodin combined with 1 grain of "Vegetable Albumen" obtained from gluten. The advertising says much of the colloidal state, which is "characteristic of living organisms," within which "the reactions are nearly always between colloids." It is asserted that:

"Colloidine possesses a considerable catalytic action. It undergoes partial peptonization in the stomach and this work is continued in the intestines where the ferment erepsine destroys the albuminous molecule gradually liberating the iodine. . ."

"Colloidine acts not only like iodine, iodides, and all the derivatives of iodine in general but by reason of its *Colloidal* or *'living state'* it possesses a specific action on a great number of diseases."

"3 tablets of COLLOIDINE are equivalent to 15 grains of iodide. . . ."

"The action of Colloidine is much gentler than that of all other products of Iodine. *Its elimination is slower, more regular and more prolonged.* . ."

"Never produces Iodism."

The Chemical Laboratory of the American Medical Association could not confirm these claims. It reports that:

1. Iodin is present in Colloidine in the form of an iodid or a form which so readily yields iodid that the therapeutic effects of Colloidine administration would appear to be that of iodid medication. This is demonstrated by the fact that when Colloidine is treated with water all of the contained iodin goes into solution and from this aqueous solution silver nitrate solution precipitates all of the iodin.

2. Instead of the claimed iodin content of ⅓ grain (21.6 mg.) per tablet, the tablets of Colloidine were found to contain only 15.46 mg. (about ¼ grain) or about 72 per cent. of the amount claimed.

3. Each tablet corresponds in iodin content to 3/10 grain potassium iodid or ¼ grain sodium iodid. The largest dose of Colloidine recommended—15 tablets per day in syphilis—corresponds to a dosage of 4½ grains potassium iodid, or 3¾ grain sodium iodid. The small dose of iodid administered evidently accounts for the reported absence of symptoms of iodism after the administration of Colloidine.

Colloidine is called a

"New Treatment of Rheumatism, Gout, Arteriosclerosis, Arthritis, Asthma, Emphysema, Scrofula and Syphilis."

Since the chemical examination shows that treatment with Colloidine must amount to the administration of iodid—nothing more—the following claims are unwarranted; they are even absurd.

"Colloidine is the most useful medicine for Arteriosclerosis. It is not only a marvellous curative for this affection, but also an efficacious preventative in functional troubles of presclerosis . . ."

"Colloidine facilitates and regulates the menstrual functions . . ."

"Colloidine constitutes an ideal alterative for purifying the blood."

Finally, the recommendation to depend on Colloidine for the treatment of syphilis is fraught with danger. (As remarked before, the maximum daily dose of Colloidine is equivalent to only 4½ grains potassium iodid or 3¾ grains sodium iodid.)

"SYPHILIS AND ITS MANIFESTATIONS (Secondary and tertiary stages) Cerebral Syphilis.

"Dose.—Commence with 3 tablets in the morning and 3 tablets in evening, increase the dose 2 tablets every 8 days up to 15 tablets a day,

continue this dose for a month according to the [*sic*] of the stages of the disease. Twice a year in Spring and Autumn undergo two months treatment.

"In this affection Colloidine can be substituted for Iodides in permitting the absorption of large doses of Iodine without any toxic symptoms or fatigue whatsoever."

It is recommended that Colloidine be held ineligible for N. N. R. for conflict with Rules 1, 4 and 6.

The foregoing report was sent to the American agent for Colloidine, who in the course of time submitted a reply by the manufacturer. The reply objected to the method of analysis used and submitted a method. It also requested a "test" of Colloidine by "American doctors" and offered to remove conflict with Rule 4. The method of analysis used by the Association's chemists is a standard one; the one proposed by the manufacturers of Colloidine was unsatisfactory and gave variable and lower results. The manufacturer was therefore advised that the evidence submitted did not warrant further consideration of the product so far as the therapeutic claims were concerned, but that if evidence showing removal of conflict with Rule 4 was submitted the report would be modified to bring this out. No reply having been received to this, the report is now published.

Correspondence

The American Red Cross in Turkey

To the Editor:—The American Red Cross had charge of the French hospital of 120 beds, the British hospital of forty beds, and a large section of one of the large military barracks in the city, consisting of nine wards of 556 beds. The whole American community in Constantinople showed their interest by cooperating heartily in the work. The wounded were brought to Constantinople by Red Cross or Red Crescent ships from the Gallipoli peninsula, and were distributed to the various hospitals, barracks, schools, etc., which, in all parts of the city had been taken over by the militia, and transformed into emergency hospitals. The organization of these hospitals, the care of the wounded, the comparative freedom of the Turkish troops from epidemic diseases, all testify to the ability of the Turk to use modern methods of prophylaxis and sanitation in case of necessity. That the initiative in this case was taken by the German ally of Turkey is none the less reason for giving Turkey credit for a remarkable piece of work, as for instance the following:

Prophylaxis Against Epidemic Diseases in the Turkish Army: With the exception of a typhus epidemic in eastern Turkey, there has been no epidemic of consequence among the Turkish troops. All soldiers were given prophylactic injections of vaccines for Asiatic cholera, typhoid and dysentery, and were vaccinated for smallpox. The smallpox vaccinations, if unsuccessful, were repeated at intervals of a week, for four or five times. Three typhoid injections were given at intervals of three or four days, alternating with injections for cholera. The dysentery vaccine was given in one injection. Two kinds were made, one containing only the Shiga bacillus, and the other being a polyvalent vaccine, consisting of four strains of dysentery bacilli. The four vaccinations were completed in the course of ten days. Soldiers enlisting from time to time were checked up to see if they had received the prescribed number of injections. As to the efficacy of these vaccines, it is hard to judge, except negatively. The data available do not give evidence of any persons contracting the diseases after having been treated in the prescribed manner, and it is only negatively possible to conjecture what the result would have been had not the preventive measures been carried out.

The Typhus Epidemic in Eastern Turkey: It is not generally known that the typhus epidemic in Turkey equaled in severity, if it did not surpass, the Servian epidemic of the same disease, the number of victims being not far from 150,000 from conservative estimates. The sacrifice of life was due to the lack of equipment and of men properly trained to fight typhus epidemics, and to the difficulty of transportation in Asia Minor, and added to these, the necessity of Turkey using every resource for her actual fighting forces, and to the fact that in those eastern provinces supplies of soap, fuel and even water were very difficult to obtain. Hundreds of physicians and helpers sacrificed their lives in vainly trying to stem the tide. Nine of our Americans have succumbed to the disease, among the latter three of our best American physicians in that country. It is a sacrifice which might have been averted had they been fully equipped to fight the epidemic. In the Erzerum region, the deaths were several hundred per day, the condition of the people as to filth being indescribable. Great trenches were dug, and into these trenches were thrown each evening the bodies of the victims of that day. When that trench was filled, earth was thrown over the top and another trench prepared. The epidemic died out during the summer months, to reappear in the autumn, and is now continuing its ravages.

Tetanus in the Turkish Army: The large proportion of shrapnel and hand grenade wounds in this war makes the prevention and treatment of tetanus correspondingly important. Among the Turkish wounded, the proportion of those who developed tetanus was from 1:150 to 1:200. Prophylactic injections were not generally used in the field hospitals, and in only a few of the hospitals of Constantinople. Antitetanus serum was used in all of our cases, although it did not seem to influence the disease particularly, after the muscle contractions were well inaugurated, as the tetanus poison had evidently so combined with the nerve elements that its neutralization by a serum seemed impossible. The Turkish medical men regard tetanus as highly contagious, and rigidly enforce isolation and quarantine of all cases. This idea has resulted from so-called epidemics of the disease in hospital wards, the simple explanation being that, in all probability, the instruments or dressings used without careful sterilization between cases is the cause of the "epidemic."

Gas Gangrene Among Turkish Wounded in Constantinople: Inquiries as to the frequency of gas gangrene among the wounded in the hospitals in Constantinople gives an estimate of a proportion from 1:200 to 1:250 of all cases. One of the Turkish surgeons was treating patients with the actual cautery, cauterizing very extensively and deeply proximal to the margin of the advancing gangrene. He claimed to have saved a number of patients. I saved two by high amputation; one was a shoulder disarticulation, the other an amputation at the upper third of the thigh. In the latter case, on amputating, one group of muscles on the inner aspect of the thigh was seen to be full of gas. This group was removed from its insertion, and the other groups of muscles dissected apart and, the stump being left entirely open, the whole wound was drenched in strong potassium permanganate solution. This treatment of the wound was repeated twice daily for several days, recovery being uneventful. This muscle infiltration with gas was noticed in other cases, in one of which no crepitation could be elicited above the gangrenous area, which extended half way to the knee. At operation, however, amputation at the upper third of the thigh revealed the thigh muscles everywhere infiltrated to such extent that the muscles cut like lung tissue, and the disease was entirely uninfluenced by the operation. As with tetanus, I found that tardy gas gangrene developed following operation long after the original gunshot injury. I had two such experiences. One of these was a case of ununited fracture of the humerus with the severing of the musculospiral nerve and consequent wrist drop. I operated about two months after the injury, suturing the nerve and boneplating the humerus. Nothing unusual as to the character of the tissues was noticed at the operation. There had been no infection in the wound for some weeks preceding operation. Infection introduced from without can be ruled out. Beginning gas gangrene was noticed the day following operation, and thirty-six hours later the patient succumbed. In the light of this unfortunate result, I know of nothing which could have been foreseen as a contraindication to operation, or anything to indicate that this particular

patient had lurking within the wound a latent infection of this nature.

Spontaneous Healing of Traumatic Aneurysms: In THE JOURNAL, June 12, 1915, p. 2026, an abstract of an article by C. Longard (*Deutsche medizinische Wochenschrift*, April 15, 1915), informs us that a large artery never recovers spontaneously after being grazed by a bullet, so that the wall gives way. I wish to report three cases which occurred in my service for the Turkish wounded in Constantinople, in which, clinically speaking at least, perfect recovery followed rest in bed and the application of a simple bandage. One of these was a pulsating aneurysm of the external carotid of the right side of the neck. It was caused by a bullet which passed through the neck, leaving clean entrance and exit wounds. There was some general swelling of the soft tissues of the neck, and a visible tumor the size of a small walnut, easily compressible, with pulsation and bruit plainly transmitted to the examining hand. The soldier was under my care for about five weeks, after which he was transferred to a convalescent ward. I saw him about two months later, ready to return to his regiment. His aneurysm had become a hard nonpulsating nodule the size of a small hazelnut, and had given him no trouble whatever. The other two cases are practically repetitions of this case except for location, one case being a gunshot aneurysm of the popliteal artery of the left leg, and the other a gunshot aneurysm of the right femoral artery in the right groin. In both these cases, as in the first case, the aneurysmal tumors were palpable, pulsating, compressible and with distinct bruit. There was no infection present in any of these three cases. The patients were up and about before all pulsation and bruit ceased, the patient involuntarily holding the injured limb more or less flexed while walking. I have no statistics to show the proportion of these three cases to those which have come to operation.

A. R. HOOVER, M.S., M.D., Auburndale, Mass.

So-Called "Incipient" Tuberculosis

To the Editor:—Dr. Ritter's criticism of the expression "incipient pulmonary tuberculosis" (THE JOURNAL, Feb. 19, 1916, p. 592) is timely. In a paper read before the San Francisco County Medical Society last October (*California State Journal of Medicine*, 1916, xiv, 20), I called attention to the fallacy of using this term in describing a condition, the pathology of which was sufficiently advanced to give rise to demonstrable physical signs. At this time I ventured the opinion that "when it is generally recognized that tuberculosis obtains foothold first in infancy or early childhood, and when its pathology and the manner in which it spreads are more thoroughly understood, the term 'incipient' will not have the prominent place in medical nomenclature it now possesses. There will then be a general recognition of the fact that true incipiency in lung tuberculosis is not clinically demonstrable." It is inconsistent to plead for exact methods in diagnosis, based on a more accurate knowledge of the underlying pathology, and retain a nomenclature as misleading as the term "incipiency" when applied to clinically demonstrable active tuberculosis.

GEORGE H. EVANS, M.D., San Francisco.

Multiple Metastatic Sarcomas of the Lungs

To the Editor:—In the article by Drs. Holt and Ratterman on this subject (THE JOURNAL, Jan. 15, 1916, p. 171), statement is made that "sarcoma of the lungs, whether primary or secondary, is very rarely found." These authors report a case of multiple metastatic sarcoma of the lungs very fully and carefully. I wish to take exception to the statement regarding the frequency of secondary sarcomas of the lung, and in reply assert that not only are they relatively common but also they are to be looked for in every case of primary sarcoma, especially of the bone. The lungs are a characteristic location for secondary metastases in sarcoma for the reason that this type of neoplasm early invades blood vessels and especially the thin walls of veins. The wall is invaded by the advancing malignant growth, and the round or spindle cells are caught in the blood stream and transported through the heart to the lungs, whose capillaries act as a filter and retain the embryonic cells. Here they proliferate and form secondary nodules. The lungs in sarcoma play an analogous rôle as a filter to the regional lymph glands in carcinoma, whose metastases travel by way of the lymphatics instead of the blood stream. A second pathway of conduction for metastases of sarcoma to reach the lung is through the thoracic duct, and in the case of lymphosarcomas of the mediastinum, the lymphatics may even act as conductors of metastases to the lungs. I have seen a number of cases of multiple metastases in the lungs, and we have had an example during the past month among our necropsies at the Cook County Hospital. We may explain the paucity of reported cases not so much because of their rarity as because of their frequency.

HARRY JACKSON, M.D., Chicago.

Crown Gall and Cancer

To the Editor:—Recently I have made discoveries which tie crown gall of plants closer to cancer of man and animals. I can now produce embryonic teratomas at will by bacterial inoculations. All that is necessary is to inoculate growing plants in areas containing dormant totipotent or pluripotent cells, using *Bacterium tumefaciens*. Moreover, as in man, daughter tumors are produced freely, and these also contain teratoid elements. These results have been obtained repeatedly during the last two months on pelargonium, tomato, tobacco and citrus. A full account will be published within a short time.

ERWIN F. SMITH,
Bureau of Plant Industry,
Laboratory of Plant Pathology,
Washington, D. C.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FIRST ROENTGENOGRAMS OF BLADDER

To the Editor:—1. Who was the first to take a roentgenogram of the urinary bladder filled with an opaque mixture?

2. Who was the first to demonstrate a diverticulum of the urinary bladder in this manner? What was the date of this demonstration?

J. M. GARRATT, M.D., Buffalo.

ANSWER.—1. Teissl, in the *Wiener medizinische Blätter*, 1902, No. 10, published an article in which he described a method of filling the bladder with mercury and taking roentgenograms. His experiments were done on the cadaver.

2. Perthes in an article on "Congenital Diverticula of the Bladder" (*Deutsche Zeitschrift für Chirurgie*, 1909, c, 253), presented some good roentgenograms of the bladder made by filling the bladder with 5 per cent. collargol. The pictures show the outline of the bladder very nicely, and also the outline of the diverticulum. Perthes claimed in this article that these were the first roentgenograms taken in this way showing diverticula of the bladder, and they are the earliest that we have been able to find in the literature.

INJECTIONS OF HOT WATER IN GOITER

To the Editor:—Please tell me the status of operation for goiter by injection of hot water or other medium. The patient in whom I am interested refuses absolutely any cutting operation. The case is apparently a favorable one, being small, unilateral and to the touch cystic.

WILLIAM FAWCETT SMITH, M.D., Calexico, Calif.

ANSWER.—The treatment of goiter by the injection of hot water has been followed by very good results when a proper selection of cases has been made; not all cases are suitable for this kind of treatment. Hot water injections should not be used in the ordinary large nontoxic goiter; these cases are best treated by removal. The method is particularly applicable to toxic goiters—to the small toxic goiters with not very severe symptoms, and to the larger toxic goiters

with severe symptoms, so severe as to make the operative risk very great. These cases may often be improved by injections of boiling water, so that they become good operative risks. In some cases in which operation has been performed and a portion of the gland removed, but in which complete subsidence of symptoms has not taken place—evidence of hyperthyroidism still remaining after recovery from the operation and proper rest and treatment—if the remaining portion of the gland is injected with boiling water, its function may be still further reduced and complete recovery result. An excellent article on the subject by Dr. Miles F. Porter, giving technic and showing what can be accomplished with the method, may be found in *Surgery, Gynecology and Obstetrics,* January, 1915.

ARTICLES ON INTERNAL SECRETION

To the Editor:—Please refer me to reliable recent literature on the ductless glands and internal secretions.

CARL STUTSMAN, M.D., Burlington, Iowa.

ANSWER.—A list of articles on this subject was published in THE JOURNAL, July 26, 1913, p. 294. The following articles have appeared subsequent to that date:

McIlroy, A. L.: *Jour. Obst. and Gynec. of Brit. Emp.,* May, 1913; abstr., THE JOURNAL, July 26, 1913, p. 309.

Murray, G. R.: Some Aspects of Internal Secretion in Disease, *Brit. Med. Jour.,* July 26, 1913; abstr., THE JOURNAL, Aug. 23, 1913, p. 623.

Discussion on Internal Secretions, Seventeenth International Medical Congress, abstr., THE JOURNAL, Aug. 30, 1913, p. 698.

Schitz, C.: Cataract and the Internal Secretions, *Norsk. Mag. f. Lægevidensk.,* September, 1913; abstr., THE JOURNAL, Oct. 18, 1913, p. 1499.

Brickner, S. M.: Rôle of Glands of Internal Secretion in Genesis of Fibroma Molluscum Gravidarum, *Surg., Gynec. and Obst.,* October, 1913; abstr., THE JOURNAL, Nov. 15, 1913, p. 1846.

Human Pancreatic Secretion, editorial, THE JOURNAL, Dec. 13, 1913, p. 2161.

Lehmann, F.: Habitual Abortion in Connection with the Internal Secretions, *Arch. f. Gynäk.,* ci, No. 1, abstr., THE JOURNAL, Jan. 17, 1914, p. 244.

Guggisberg, H.: Action of Internal Secretions on the Activity of the Uterus, *Ztschr. f. Geburtsh. u. Gynäk.,* lxxv, No. 2; abstr., THE JOURNAL, Feb. 14, 1914, p. 581.

The Entrance of the Internal Secretion of the Pancreas into the Circulation, editorial, THE JOURNAL, April 25, 1914, p. 1334.

Auer, E. M.: Psychic Manifestations of Disease of Glands of Internal Secretion, *Am. Jour. Insan.,* October, 1914; abstr., THE JOURNAL, Nov. 21, 1914, p. 1879.

Pribram, H.: The Status Lymphaticus and Its Relation to Pluriglandular Disease, *Ztschr. f. klin. Med.,* 1915, lxxxi, No. 2; abstr., THE JOURNAL, Feb. 27, 1915, p. 783.

Peiser, H.: Disturbance in Internal Secretion in Dysentery, *Deutsch. med. Wchnschr.,* Jan. 14, 1915; abstr., THE JOURNAL, April 24, 1915, p. 1457.

Fry, H. J. B.: Pituitary Gland in Diabetes Mellitus and Disorders of Glands of Internal Secretion, *Quart. Jour. Med.,* July, 1915; abstr., THE JOURNAL, Aug. 7, 1915, p. 561.

Oskkin, N. E.: The Thyroid Secretion in Normal and Pathologic Conditions, Russk. Vrach, March 28, 1915; abstr., THE JOURNAL, Aug. 28, 1915, p. 835.

Allen, C. L.: Delusions of Persecution as a Biologic Defense Reaction, THE JOURNAL, Sept. 4, 1915, p. 866.

BULGARIAN BACILLI IN MILK

To the Editor:—It has been suggested that unless sweet milk into which Bulgarian bacilli are to be placed is first brought to the boiling point and then cooled before the bacilli are put into the milk, the bacteria already in the milk will eventually destroy the Bulgarian bacilli, and instead of the milk being beneficial it will be harmful to those who drink it. It has also been suggested that the destruction of the Bulgarian bacilli will not be noticed as the other bacteria take their place. Can you advise me regarding both of these subjects

H. F. THIEL, M.D., Creston, Wash.

ANSWER.—There is no doubt that better results will be obtained in drinking milk containing Bulgarian bacilli if the milk is first boiled. The objections noted by our correspondent to the use of sweet milk for this purpose are quite justified, and the same objection applies in lesser degree to the use of pasteurized milk. It may be noted also that the Bulgarian bacillus is favored by a rather high temperature of incubation, from 110 to 115 F. being most satisfactory.

GROUND GLASS AS A REMEDY

To the Editor:—Some time ago a correspondent inquired as to the use of ground glass (THE JOURNAL, Nov. 15, 1915, p. 1837). I have had two such cases, both in foreigners, one a Slovak. An old lady prescribed it for her husband, who was suffering from a violent diarrhea. As accurately as I could ascertain, it is not an uncommon remedy among the peasants of eastern Europe.

J. H. MACKAY, M.D., Houston, Texas.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.

CALIFORNIA: Los Angeles, April 4. Sec., Dr. Charles B. Pinkham, Room 527 Forum Bldg., Sacramento.

COLORADO: Denver, April 4. Sec., Dr. David A. Strickler, 512 Empire Bldg., Denver.

CONNECTICUT: Regular, New Haven, March 14-15. Sec., Dr. Charles A. Tuttle, 196 York St., New Haven; Homeopathic, New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Eclectic, New Haven, March 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. E. P. Copeland, The Rockingham.

IDAHO: Boise, April 4. Sec., Dr. Charles A. Dettman, Burke.

MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MINNESOTA: Minneapolis, April 4-7. Sec., Dr. Thomas S. McDavitt, 814 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, March 20-22. Sec., Dr. J. A. B. Adcock, State House, Jefferson City.

MONTANA: Helena, April 4. Sec., Dr. William C. Riddell, Helena.

NEW MEXICO: Sante Fe, April 10. Sec., Dr. W. E. Kaser, East Las Vegas.

OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. Ralph V. Smith, 502 Daniel Bldg., Tulsa.

PORTO RICO: San Juan, April 4. Sec., Dr. Quevedo Baez, 66 Allen St., San Juan.

RHODE ISLAND: Providence, April 6. Sec., Dr. Gardner T. Swarts, 315 State House, Providence.

UTAH: Salt Lake City, April 3-4. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

WYOMING: Laramie, March 14-16. Sec., Dr. H. E. McCollum, Laramie.

Missouri September Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the oral and written examination held at Kansas City, Sept. 28-30, 1915. The total number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 33, of whom 24 passed and 9 failed; for one candidate the name of the college was not obtained. One candidate was granted a reregistration license. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Bennett Medical College	(1910)	75, 84
Hahnemann Medical Coll. and Hosp., Chicago	(1888)	75
Illinois Medical College	(1906)	79*
Kansas City Hahnemann Medical College	(1914)	76
Missouri Medical College	(1877)	75
National University of Arts and Sciences	(1915)	82, 82, 83, 86
St. Louis College of Physicians and Surgeons	(1915)	80
St. Louis University	(1915)	82, 85
John A. Creighton Medical College	(1915)	77
Columbia University, College of Phys. and Surgs.	(1905)	85
Jefferson Medical College	(1915)	88
Temple University	(1915)	82
Meharry Medical College	(1915)	76, 78
University of West Tennessee	(1915)	76, 76, 79
Milwaukee Medical College	(1910) 79*; (1911)	79*
FAILED		
Tulane University of Louisiana	(1913)	†
Kansas City Hahnemann Medical College	(1915)	‡
St. Louis College of Physicians and Surgeons	(1915)	73, 74
Meharry Medical College	(1915)	70, 72
University of West Tennessee	(1914) 70; (1915)	73

* Official reports do not contain the names of these candidates as graduates.

† Did not complete examination on account of sickness.

‡ No grade given.

Maryland Homeopathic December Report

Dr. O. N. Duvall, secretary of the Maryland Homeopathic Board of Medical Examiners, reports the written examination held at Baltimore, Dec. 17-18, 1915. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 3, of whom 1 passed and 2 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
New York Homeo. Med. Coll. and Flower Hosp.	(1915)	86.6
FAILED		
Atlanta Medical College, Baltimore	(1910)	65, 70.9

Book Notices

THE TREATMENT OF ACUTE INFECTIOUS DISEASES. By Frank Sherman Meara, M.D., Ph.D., Professor of Therapeutics in the Cornell University Medical College in New York. Cloth. Price, $3.50. Pp. 540. New York: The Macmillan Company, 1916.

In his preface, the author says that this book must be looked on as an expression of his individual opinion, and that it is didactic rather than critical. The book, for the most part, conveys this impression, and the reader feels that he is receiving the benefit of the advice of one who has been an acute and skilful observer of much clinical material. The author has evidently tried to make his treatment appeal to the intelligence of the reader, and he has made every effort to explain why certain things are done under certain conditions. Numerous errors, due to careless proofreading, are to be noted, as on page 499, "The duration averaged 14.44%"; page 274, "milk of magnesiae," etc. There are some errors in chemical formulas. These, of course, will be corrected in a new edition. The disinfection advised after the various contagious diseases is sometimes quite extreme as compared with that usually considered sufficient by sanitarians at the present time. For example, quarantine after measles is to be terminated after a bath of 1:5,000 mercuric chlorid, and fumigation is advocated after diphtheria and scarlet fever. The author insists that "full duty to the public who trust the physician is done only when he changes his clothes and better takes a full bath before seeing other children" after visiting a patient with scarlet fever. During the visit the physician has been properly protected by gown, cap and rubber gloves, and perhaps rubber shoes. It is difficult to imagine what advantage would be gained by a full bath under these circumstances. Perhaps it would not be so useless as the old measure of placing a board over the chimney of a house to protect passers-by from the contagion of scarlet fever from a case within the house. "Urotropin" and "diuretin" are used instead of the correct U. S. P. names, and proprietary names for therapeutic agents are often employed. Sometimes minor matters are given undue importance, as when in several instances a separate paragraph is devoted to the discussion of the proper night gown which heads the paragraph in boldface type. This book will appeal to general practitioners bacause of its reliable advice, which can be secured with little reading.

THE ADOLESCENT PERIOD. Its Features and Management. By Louis Starr, M.D., LL.D. Cloth. Price, $1 net. Pp. 211. Philadelphia: P. Blakiston's Son & Co., 1915.

Like Dr. Starr's earlier book, "The Hygiene of the Nursery," this book is written "for parents, nurses and all interested in the care and management of children" and youth. Social workers and teachers of adolescent pupils are included in the list of those interested. For parents, nurses, social workers and teachers, the counsel given by the author, especially in the chapters on growth, physical education, diseases of adolescence, faults of adolescents, menstruation and sexual enlightenment, make the book a valuable contribution. The author wisely urges the necessity of the instruction of every child and youth regarding the facts of reproduction, and through wise, sympathetic teaching by parents in the home to implant in the mind of the child that wholesome point of view which is the surest way to vouchsafe right thoughts and habits regarding sex. The critical professional reader cannot suppress a sincere regret that the author has failed to note that the formation of internal secretions by testes and ovaries has several years since been positively demonstrated to control the development of the distinctively masculine or feminine qualities, respectively, during adolescence and to insure the full maintenance of these qualities throughout adulthood to the onset of senility. The author refers, however, to phenomena of castration as "tending to uphold the theory" of an internal secretion. Certain other technical slips of minor import may easily be overlooked in view of the distinct value of the little volume as a physician's wise counsel regarding facts of fundamental importance in the leading of the child and youth through a critical period.

LEUKEMIA OF THE FOWL: SPONTANEOUS AND EXPERIMENTAL. By Harry C. Schmeisser, M.D. The Johns Hopkins Hospital Reports Monographs, New Series, No. 8. Paper. Price, $2.00. Pp. 34, with 6 illustrations. Baltimore: The Johns Hopkins Press, 1915.

This monograph consists of a review of the limited existing literature on the subject indicated by the title, the report of a single case of the disease occurring spontaneously, and the results of a series of inoculations into other fowls. Its chief importance lies in the fact that it corroborates the reported existence of a disease in fowls resembling closely human leukemia, and transmissible to other fowls by direct inoculation. The existence of such a transmissible disease is important for medical research, since it makes possible experimental work in leukemia. Whether or not fowl leukemia is the same as mammalian leukemia, and especially human leukemia, must still be considered as not entirely settled. There are certain important discrepancies which may or may not be explained as due to differences in the subject rather than the disease; for example, the duration of the disease varies from three to thirty-two days, usually from one to two weeks. Schmeisser does not record any study on the filterability of the virus, as reported by others, or special research into the etiology of the disease. The paper is more confirmatory than exploratory, but is a distinctly accurate and reliable contribution to a subject that may be as important in the future of leukemia as mouse tumors have been in the development of cancer research.

MANUAL OF EMBRYOLOGY. By A. Melville Paterson, M.D., F.R.C.S., Professor of Anatomy in the University of Liverpool. Cloth. Price, $2.75. Pp. 391, with 304 illustrations. New York: Oxford University Press, 1915.

This brief compendium is an anatomist's presentation of embryology to medical students. The facts are marshaled in an exceptionally clear and concise manner with particular reference always to the practical side of the subject, namely, the elucidation of otherwise meaningless anatomic detail and the explanation of many abnormalities. Every word is significant, for the condensation of a wealth of material into a few words has been done by a master in the art of teaching. The book is not intended for those who have the privilege of studying embryos or fetuses. The original illustrations are for the most part needlessly inaccurate diagrams; the majority of the good cuts were copied from Keibel and Mall's "Handbook of the Development of Man." There are some serious errors, due apparently to the author's meager first hand knowledge of his subject. The drawing of a three months' human fetus (Fig. 34), for example, is inexcusably wrong, as is the statement (p. 97) that the telencephalic vesicles "become extraordinarily convoluted during the first month." As one might expect from the author's point of view, there is no mention of embryologic or of pertinent biologic theory.

ORTHOPEDIC SURGERY. By Edward H. Bradford, M.D., Consulting Surgeon to the Children's Hospital, Boston, and Robert W. Lovett, M.D., Professor of Orthopedic Surgery in Harvard University. Fifth Edition. Cloth. Price, $3.75 net. Pp. 416, with 369 illustrations. New York: William Wood & Co., 1915.

The new edition of this work is abridged by the omission of many references and much of the discussion of the views of other writers. As a standard textbook for the use of students, it remains satisfactory. As a reference book for practitioners, it leaves much to be desired. Some of the descriptions of operations and methods of treatment are not sufficiently detailed to be of service. The chapter on congenital clubfoot is especially weak in this regard. The Hibbs operation for spinal tuberculosis is described as originally performed, no mention being made of the modifications introduced since 1911. The technic of plaster of Paris work and the details of mechanical apparatus are handled in too general a manner. The presswork is excellent, but the proofreading has been somewhat careless. For instance, on page 361, line 11, "tendon" should be "tenotome." The illustrations are many and well chosen. The vast experience of the distinguished authors makes it certain that their views on disputed subjects may be accepted as the standard.

Medicolegal

Breaking of Stitches and Opening of Wound Not Covered by Accident Insurance

(Stokely vs. Fidelity & Casualty Co. of New York (Ala.), 69 So. R. 64)

The Supreme Court of Alabama affirms a judgment in favor of the defendant, which was sued on a policy of insurance issued by it against "bodily injury sustained . . . through accidental means . . . and resulting directly, independently, and exclusively of all other causes . . . in death." The court says that the evidence showed that the insured had an operation performed for appendicitis and for four or five days went along without apparent complication and with every promise of a rapid recovery, but when the surgeon visited him on the morning of the fourth or fifth day the man vomited and coughed for a spell and then complained of some pain. On examination it was found that the wound had opened and the patient's intestines were protruding through it. Immediately he was again anesthetized and the wound closed, but he never recovered consciousness, and died in the course of a few hours. The surgeon testified that he saw no reason in the world why the patient should not have recovered, had the stitches in the wound not broken. There was nothing else wrong with the patient—by which, of course, the witness meant nothing wrong as operations for appendicitis go. To sum up, the witness was of the opinion (and this is clear even to the nonprofessional mind) that the patient's disease brought on the first operation, the coughing and vomiting burst the stitches, bringing on the second anesthetic and the second operation, and at the end of the sequence came death. There would have been no stitches, nor any rupture, but for the disease and the wound it made necessary. Nor would there have been any coughing or vomiting, though it is not supposed that these were accidents or the result of an accident, had not the disease made the administration of an anesthetic and the performance of the operation necessary. The rupture of the stitches, if an accident in any proper sense, was not an accident causing bodily injury and death; it was merely the failure of means taken to prevent a death threatened by other independent causes. The death which followed was undeniably and in a most material way contributed to, if not exclusively caused by, the disease with which the insured was afflicted and the means taken for his relief. The court is clear to the conclusion that, if there was any accident in this case, it was not an accident causing bodily injury and resulting directly, independently, and exclusively of all other causes, in death within the meaning of the policy.

Sufficient Evidence of Malpractice in Treatment of Fracture

(Wilk vs. Black (Mich.), 154 N. W. R. 561)

The Supreme Court of Michigan, in affirming a judgment for $2,250 in favor of the plaintiff, says that the important question was: Was there evidence of negligence sufficient to carry the case to the jury? The action was brought to recover damages for alleged malpractice in the treatment of a fracture of the ulna and radius of the left forearm, which the plaintiff, 22 years of age, sustained by being thrown from a horse at a farm 8 miles from the village where the defendant practiced his profession. Within two or three hours after the accident the defendant treated the fracture. The plaintiff returned the following Monday, when the defendant examined the arm without taking off the splints and told him that the arm seemed to be all right, to be careful with it, and to come again in about two weeks. The plaintiff made his next and last visit to the defendant November 2, at which time the splints were removed, the arm examined, and the defendant claimed he found it to be perfect, the bones straight and in normal condition. The defendant assured the plaintiff that the arm was coming on all right and directed him to come back again in two weeks and he would take off the splints. The plaintiff claimed that at that time there was a lump on the arm. He also asked if he could not take off the splints himself, and the defendant said that he told him he could if he wanted to and was satisfied that the arm was all right, but, if he wasn't, the defendant wanted him to come right back. The plaintiff did not return for several months, when he came to demand a settlement, being accompanied by his attorney, who exhibited a roentgenogram of the arm made May 13. The plaintiff claimed to have worn the splints continuously from the time of his last visit to the defendant until the morning of November 28, when he took them off and discovered a bunch on the inner side of the arm, and immediately went to consult another physician. The roentgenogram showed a complete fracture of the bones, and there was testimony that the arm would always be crooked. The defendant, however, described the fracture as a green stick fracture, claimed that he had properly treated the arm, and contended that its condition when suit was brought was caused by one of three things: (1) that the plaintiff injured his arm by working after the injury; (2) that the plaintiff injured his arm while it was in splints on the way home from a dance; (3) that the plaintiff removed the splints himself, and thus caused the injury. Without stopping to go into detail, the court thinks the trial judge very properly concluded that there was a cause for the injury. Nor does it agree with the contention that the skill of the defendant was not in issue. There was testimony that when he first set the arm he used splints that were too short. There was also testimony that he assured the plaintiff his arm was all right when a bunch of prominence had appeared on it showing that it needed further attention. Neither can the court say that the trial judge abused his discretion in refusing to grant a new trial on the ground that the verdict was excessive.

Death from Having Chloroform Administered by Person Neither Physician nor Trained Nurse

(Roughlin vs. State (Ga.), 86 S. E. R. 452)

The Court of Appeals of Georgia reverses a judgment of conviction of the defendant, Roughlin, who was charged with involuntary manslaughter in the commission of a lawful act, namely, the circumcising of a named person, administering chloroform and having it administered to him by one who was neither a physician nor a trained nurse. But the presentment, the court holds, did not constitute a good accusation, because the allegations were insufficient to inform the accused of the circumstances of the transaction in which he was alleged to have violated the law, so as to enable him to prepare his defense, and the defendant might have admitted the statements of fact contained therein without subjecting himself to any criminal liability. There is no law of the state of Georgia declaring the administration of chloroform by one who is neither a physician nor a trained nurse to be unlawful. Consequently, all that was stated on that subject in the presentment in the case was a mere conclusion of the pleader.

Furthermore, one charged with the offense of involuntary manslaughter in the commission of a lawful act, by negligently permitting the administration of chloroform by an assistant not qualified to administer it, is entitled to know the name of the person who is referred to as having actually administered the chloroform, so as to enable him properly to prepare for trial. To leave the defendant in the dark as to the identity of this undisclosed individual might be to face him with a witness whose testimony he was wholly unable to meet and whose credibility he was not prepared to impeach. Besides, presuming that the defendant did the acts alleged, it might be assumed that he already knew whom he had to administer the chloroform; but the defendant's plea of not guilty put in issue every material allegation in the accusation against him, and, since the innocence of one accused of crime must always be presumed, it could not be assumed that the defendant know who administered the chloroform or that any chloroform was, in fact, administered at all. One accused of crime has the right, if he demands it by timely demurrer, to have the accusation perfect in both form and substance.

Society Proceedings

COMING MEETINGS

American Medico-Psychological Association, New Orleans, April 4-7.
American Urological Association, St. Louis, April 17-19.
Arizona Medical Association, Phoenix, April 26-27.
Arkansas Medical Society, Texarkana, May 2-4.
California State Medical Society, Fresno, April 18-20.
Georgia Medical Association, Columbus, April 19-21.
Kansas Medical Society, Topeka, May 3-5.
Louisiana State Medical Society, New Orleans, April 18-20.
Missouri Valley Medical Society, St. Joseph, Mo., March 23-24.
North Carolina State Medical Society, Durham, April 18.
South Carolina Medical Association, Charleston, April 18-20.
Tennessee State Medical Association, Knoxville, April 4-6.

CHICAGO MEDICAL SOCIETY

Regular Meeting, held March 1, 1916

The President, DR. CHARLES F. WHALEN, in the Chair

Trichinosis, with Remarks on Diagnosis

DR. LEON BLOCH: My report includes a series of twenty-nine cases that have occurred in the last two and a half years at the Cook County Hospital. All but three patients were of foreign birth, three were children, and twenty-six were adults whose ages ranged from 18 to 51. The facts pointing toward trichinosis were the history of eating raw pork in thirteen cases; gastro-intestinal disturbances, such as nausea, vomiting, diarrhea, or constipation, or abdominal pain in thirteen; muscle pains, either subjective or objective, referable to the arms, legs, jaws, neck or chest, in twenty-six; edema, noticed by the patient or the examining physician, in seventeen cases; prostration from inability to use the muscles together with toxemia in three; high temperature and low pulse rate in thirteen; profuse sweats in seven; splenic enlargement in twelve; diazo test positive in all of five cases tested; eosinophilia in all; leukocytosis above 10,000 in twenty-three, and the demonstration of the trichina in the muscles in twenty-three, in the spinal fluid in two, in the stool in two, and in the blood in one. Differentiation of trichinosis from typhoid fever, pneumonia, nephritis, endocarditis and multiple neuritis can be readily made by careful attention to the symptoms and signs of these conditions, and by attention to the blood and muscle examination. In one case of trichinosis there were symptoms of cortical involvement, such as general and unilateral convulsions, hemiplegia and death. Postmortem examination showed marked hyperemia of the cerebral cortex, especially the right half.

DISCUSSION

DR. MAXIMILIAN HERZOG: Trichinosis is not so rare as it is supposed by most practitioners. The clinical history and the signs and symptoms of trichinosis are such that the diagnosis is very difficult. However, the diagnosis becomes easy if proper laboratory methods are used, particularly in examining the stools and the blood. The number of cases reported in the literature in the United States since the report of the first case was published in 1842 is 1,550, with 240 deaths. From these figures the impression is created, first, that the disease is comparatively rare, and second, that the mortality is high. Both impressions are erroneous. The disease is not so rare as one would imagine, and the mortality is not high save in exceptional cases.

Recognition and Treatment of Ectopic Gestation

DR. E. E. MONTGOMERY, Philadelphia: The termination of tubal pregnancy, either by rupture or tubal abortion, should be suspected when a woman has passed one or two periods; has suspected she was pregnant; has general digestive or nervous symptoms; has felt more or less discomfort in one or the other side of the pelvis; has been taken with sudden, severe, lancinating pain which has rendered her unconscious or caused her to drop in a faint; when her pulse becomes feeble, even absent at the wrist, her skin blanched and covered with perspiration, and when she is unable to raise her head without the sensation of fainting, possibly remaining unconscious. Such symptoms, even though the patient has not missed a period, should lead to the suspicion of internal hemorrhage, of which ectopic gestation is, with extremely rare exceptions, the cause.

My greatest solicitude during recent years has not been awakened by the patients on whom I have operated early, even though in shock, but by those seen late or when for some reason the surgical treatment has been deferred. The patient is too much depressed to be influenced by fear of the operation. The administration of ether in small quantity under such circumstances is a stimulant, while the vessels are being filled with saline solution. The prime consideration is expedition; no time is to be lost in the removal of the fluid blood; its presence will aid in the more rapid resuscitation when infection has been avoided. The abdomen may be filled with salt solution before the wound is closed, and its completion should be followed by the Murphy drip. The first consideration is the arrest of the hemorrhage and to place the patient in such a position that her powers can be strengthened. Stimulants should not be given. A sedative should be administered. A vessel is open, and the only hope for relief outside its direct control by clamp or ligature is through the formation of a clot whose further action increased blood pressure will imperil. As it cannot be assumed in any case that the clotting will be effective in the control of the hemorrhage, the greatest certainty is through efficient closure of the bleeding vessel through its ligation, and measures should be employed to secure this under the most favorable circumstances. When it is not practicable to secure immediate surgical relief, the patient should be placed under the influence of morphin and be kept free from annoyance until she can be placed in proper environment for surgical measures. Immediately preceding, or simultaneously with the incision of the abdomen, active stimulation, the most efficient of which is the intravenous transfusion of saline solution to which epinephrin has been added, should be begun and continued during the operative procedure, by which any additional shock through operation is more than counteracted. Even though it is apparent that operation is not needed to insure against further hemorrhage, to open the abdomen is advisable for the removal of large quantities of clotted blood as the forces of the patient are relieved from its care and disposal.

DISCUSSION

DR. CHANNING W. BARRETT: Oftentimes it is not one large rupture that takes place in extra-uterine pregnancy but a series of ruptures. About 75 per cent. of the cases have shown definite or strongly implied gonococcic infection. Just why the cases which furnish the 15 per cent. should be counted the atypical cases, and the class of cases that furnish 85 per cent. should be regarded as typical, I cannot understand. I should say that the first 15 per cent. are the typical severe cases, and the 85 per cent. in which the patients have one rupture and recover, and then another and recover, are the typical mild cases. If this thought is borne in mind, it will aid in making the diagnosis. As to treatment, I do not believe we should operate on a patient just because we are suspicious of the existence of a little pelvic trouble. If the diagnosis is clear, it is better to operate before rupture has taken place, or after the patient has recovered from the rupture. Nothing in the way of non-operative treatment takes the place of ligating vessels that are bleeding. Nothing short of putting clamps or ligatures on bleeding vessels is going to save a moribund patient.

DR. CAREY CULBERTSON: Gonorrhea is a suppurative infection, and only secondarily complicated by colon bacillus infection. The typical gonorrheal tube is a pus tube. Pyosalpingitis destroys the tube as an oviduct, and when it has been destroyed as an oviduct, pregnancy of any sort is impossible. There are various degrees of gonorrheal infection. In all cases the infection is not equally virulent or the same in the pathologic condition which it produces. I do not mean to imply that the gonococcus is not responsible in any degree for ectopic gestation, but a tube which makes tubal pregnancy possible must be patent, and at the same time diseased. In many cases a tube showing salpingitis, which is slightly adherent, kinked and markedly convoluted, is nevertheless patent. I believe there is a focal infection in the tube the same as has been demonstrated to exist in the appendix

and various other portions of the anatomy, and I see no reason why that type of tube should not be the one to make tubal pregnancy possible. As a rule, the opposite tube is more markedly diseased than the one in which the gestation has taken place, and in certain instances it may become necessary to sacrifice both tubes.

DR. HENRY F. LEWIS: All women who have symptoms that point in any way toward ectopic gestation should be subjected to examination, and should be impressed with the importance of consulting an obstetrician very soon after they expect themselves to become pregnant. The diagnosis of ectopic pregnancy is made oftener at operation than before it. Usually, the symptoms are not typical of rupture or of marked abortion, and the symptoms of marked abortion and rupture are not such as to make it easy to tell before operation whether rupture or abortion has taken place. In many cases of abortion the symptoms are not severe. Likewise, the symptoms of rupture are not severe. There are cases in which the rupture is only slight, followed by a slight hemorrhage. The majority of ruptures take place in the isthmian portion of the tube, while other ruptures take place in the ampulla, which permits of greater distention.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

February, XXXIX, No. 4, pp. 355-502

1 *Influence of Heavy Metals on Isolated Intestine. W. Salant and C. W. Mitchell, Washington, D. C.
2 Nerve Conduction and Other Reactions in Cassiopea. A. G. Mayer, Washington, D. C.
3 *Effects of Testicular Transplants on Vasomotor Irritability. H. Wheelon and J. L. Shipley, St. Louis.
4 Studies in Blood Pressure Estimations by Indirect Methods. Mechanism of Oscillatory Criteria. J. Erlanger, St. Louis.
5 *Effect of Nicotin on Reflex Action of Cutaneous Sense Organs. I. Howat, Kansas City, Kan.
6 *Coagulation of Blood in Pleural Cavity. G. P. Denny and G. R. Minot, Boston.
7 *Direct Evidence of Duodenal Regurgitation and Its Influence on Chemistry and Function of Normal Human Stomach. W. H. Spencer, G. P. Meyer, M. E. Rehfuss and P. B. Hawk, St. Louis.
8 *Liver Circulation in Relation to Glycemia. H. McGuigan and E. L. Ross, Chicago.

1. Influence of Heavy Metals on Isolated Intestine.—Salant and Mitchell found that zinc is a powerful depressant, exposure to very dilute solutions for thirty to forty-five minutes causing decreased contractility of the intestine, from which it only partly recovers on changing to pure Locke's solution. Medium concentrations of zinc may completely and permanently abolish contractions. Dilute solutions of nickel acetate may stimulate intestinal contractility after causing primary depression. Only the more concentrated solutions inhibit muscular activity but considerable improvement was observed when changed to pure Locke's solution. That nickel is much less toxic than zinc was also shown by the reaction of the intestine to barium chlorid and pilocarpin, response to these agents being obtained after treatment with a much more concentrated solution of nickel acetate than of zinc malate. The reaction to barium persisted longer than the response to pilocarpin after the intestine was exposed to the influence of zinc and a concentrated solution of nickel acetate. The intestine of the cat is more resistant to the action of zinc than that of the rabbit. The difference is not so marked in experiments with nickel. The ileum and colon were more resistant both to the action of zinc and the depressing effect of higher concentrations of nickel.

3. Effects of Testicular Transplants on Vasomotor Irritability.—The findings of Wheelon and Shipley point to the conclusion that a direct relationship does exist between the internal secretions of the testis and the sympathetic nervous system. Castration results in a depressed activity of the nervous mechanism while subsequent establishment of the lost parts tends to lift the depression and at least partially to reinstate normal activity.

5. Effect of Nicotin on Skin Reflexes in Frog.—Howat found that small doses of nicotin cause a depression or loss of the reflexes, fibrillar contractions, forced respiration and a slight constriction of the pupils. One dose did not usually show an increased irritability as an after effect. These changes appear immediately after injection, and last from one half to three or four hours, depending on the dose. Doses of one-half minim of 0.05 per cent. per 10 gm. frog have a greater effect than larger doses of Ringer's solution. Large doses of nicotin cause an entire loss of the skin reflexes, and muscle tone, producing a flattened position; an inhibited, then irregular respiration; constriction of the pupils; loss of turnover, compensatory and equilibrium reflexes; a tetanus or stiffening of the front legs, followed by a relaxation and loss of muscle tonus. Continued gradually increasing doses of nicotin cause tolerance to the drug, such that it loses some of its effect. Continued use of nicotin causes increased irritability of the skin reflexes, making them respond abnormally. It also causes a loss of weight, and a discoloration of the skin. The effect on respiration and constriction of pupils is the same as in a normal frog, except that the effect does not last so long. The toxic dose obtained from the results of a large number of experiments, showed that it varied from 6 to 27 minims of 1 per cent. nicotin per 10 gm. frogs. Some frogs naturally proved more resistant than others. For those frogs which had been given continued gradually increasing doses, the toxic injection varied from 6 to 9 minims of 1 per cent. per 10 gm. frog. Nicotin acted as an accumulative drug, lessening the bodily resistance until the toxic dose is found to be less for the tolerant frog than for the normal one. Nicotin is much more powerful in its effects on cutaneous reflex reactions, ciliary muscles, respiratory activity and bulbar centers than is alcohol.

6. Coagulation of Blood in Pleural Cavity.—It is held by Denny and Minot that small amounts of blood introduced slowly into the pleural cavity when deep artificial respiration is maintained will remain in large part fluid. Small clots are always found in the pleural cavity, the size depending on the amount of blood injected and the rapidity of injection. The fluid portion of the blood can only be clotted by addition of fibrinogen. Thrombin, calcium and thromboplastin are incapable of causing coagulation. The blood shows absence of fibrinogen which perhaps may be removed in some way other than by coagulation. Pure fibrinogen solution which has been in the pleural cavity under the same conditions, is not only altered, but clots more readily than the control on adding suitable amounts of thrombin. Small amounts of thrombin and fibrinogen when mixed in suitable proportions and injected slowly into the pleural cavity remain fluid and show an absence of fibrinogen. Since it has been shown that fibrinogen alone loses none of its properties after remaining in the pleural cavity, and that the presence of thrombin under the same conditions causes a disappearance of fibrinogen, the authors can only conclude that coagulation has taken place. The experiments with artificial solutions exactly parallel those with whole blood, the conclusion being that blood which has been in the pleural cavity remains fluid, not because of any alteration of the elements, but because of previous coagulation and defibrination.

7. Effect of Duodenal Regurgitation on Gastric Function.—The following conclusions are drawn by the authors: A tryptic enzyme is almost constantly present in the fasting and digesting contents of the normal human stomach. The tryptic enzyme is deduced to be trypsin regurgitated from the duodenum. Trypsin in the gastric contents is highly resistant to the action of acid and pepsin. In general, the tryptic value is high in the presence of low acidity and in alkaline reaction, and of low value when the gastric contents are of high acid concentration. A fall in the acidity is usually accompanied by a rise in the tryptic values. The color of the gastric contents often changes during the period of experiment from that of the ingested material to a golden yellow or a dark olive or blue green. This color change is due to regurgitation of bile from the duodenum and is absent on a diet of substances which do not cause the outpouring of bile. The tryptic values in the gastric con-

tents usually rise concomitantly with the color change, although in a nonbile stimulating diet the tryptic value seems independent of the color. Sodium bicarbonate in 5 per cent. solution is held in the stomach until sufficient hydrochloric acid is secreted to bring the alkalinity to a point in which it is nonirritating to the duodenum. The retention is accompanied by a high trypsin value, suggesting antiperistalsis in the duodenum in response to an irritant. Sodium bicarbonate in 1 per cent. solution hastens the emptying of the stomach either by increasing the motility of the stomach or opening the pylorus. Sodium bicarbonate solutions do not inhibit human gastric secretion, but seem to have a direct stimulatory effect in some cases. Free hydrochloric acid seems unnecessary for the opening of the pylorus, for the stomach sometimes empties while its contents are still alkaline. Ingestion of 0.5 per cent. hydrochloric acid is followed by a rapid fall in acidity to about 0.2 per cent., due to a regurgitation of alkaline duodenal contents, as is indicated by the rise in tryptic values coincident with the fall of the acidity. The acid is then emptied from the stomach. Regurgitation of duodenal contents into the stomach is but another of the protective functions of which the body furnishes so many examples and has for its purpose the defense of the small intestines from irritants.

8. **Liver Circulation in Relation to Glycemia.**—The results of the experiments performed by McGuigan and Ross were as follows: Ligation of the portal vein caused a considerable hyperglycemia. Ligation of the hepatic artery causes no hyperglycemia. Simultaneous ligation of the portal vein and hepatic artery causes no hyperglycemia. Hypervenosity of the liver causes no hyperglycemia. Hyperarteriolization of the liver causes a significant hyperglycemia. The utmost conceivable uncomplicated change in the circulation of the liver can play but a minor rôle in the production of glucosuria or diabetes.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

February, III, No. 8, pp. 421-470

9 *Anopheles Punctipennis, Host of Tertian Malaria. W. V. King, Washington, D. C.
10 Pellagra in Jamaica. J. F. Siler, U. S. Army.
11 Case of Juxta-Articular Nodules. G. W. McCoy and H. T. Hollmann, Hawaii.

9. **Anopheles Punctipennis in Tertian Malaria.**—As a result of two comparative experiments, *Anopheles punctipennis* has proved itself to be an efficient host for the parasite of tertian malaria, *Plasmodium vivax*. In one experiment, of six specimens, mosquitoes fed on a human case of this form of malaria, five became definitely infected, the sixth remaining negative. In this one specimen the evidence pointed to the conclusion that only a very small amount of infective blood had been ingested. In one infected specimen, examined after an interval of twenty days, many ruptured oocysts were found on the stomach and an extremely heavy invasion of the salivary glands with sporozoites. Three specimens examined in a lot of six *A. quadrimaculatus* fed on the same patient showed infection of the stomach and in one an invasion of the salivary glands. In a second experiment, one *A. punctipennis*, fed on a patient infected with tertian gametes, and dissected after a lapse of twenty days, showed a light infection of the stomach and glands. Two control specimens of *A. quadrimaculatus* were found to be infected, one containing oocysts and one, after an interval of eighteen days, containing sporozoites.

Archives of Pediatrics, New York

January, XXXIII, No. 1, pp. 1-80

12 *Chemistry of Products Used in Infant Feeding. F. W. Howe, Boston.
13 Digestibility of Proteins of Milk and Their Rôle in Infant Nutrition. L. E. Holt, New York.
14 Rôle of Fat in Infant Feeding. J. L. Morse, Boston.
15 Rôle of Salts in Infant Feeding. F. H. Bartlett, New York.
16 Rôle of Carbohydrates in Infant Feeding. H. R. Mixsell, New York.
17 Malt Soup. A. G. Mitchell, Philadelphia.
18 Cases of Hereditary Spinal Ataxia. F. J. Farnell, Providence, R. I.

12. **Chemistry of Products Used in Infant Feeding.**—Speaking of proprietary foods, Howe says: In the nutrition of the infant, we cannot get away from the fundamental facts that fats, carbohydrates, proteins and salts are the essential constituents, and any proprietary food laying claim to being a complete food for an infant must contain all of these in forms which can be readily assimilated and in properly balanced proportions. We all know how difficult it is to keep fats in a sweet and wholesome condition for any length of time, and, while it is not so difficult to keep the proteins, still it is no easy matter. This narrows the field very considerably when it comes to making a proprietary food, and, as a natural result, we find most of them are made of blended carbohydrates in a large measure, milk sugar or maltose, dextrins, and the various starches, all of which can be used at less cost under their respective names and used as desired without the handicap of a blended product which is made to meet conditions in general and no one condition in particular.

Arkansas Medical Society Journal, Little Rock

February, XII, No. 9, pp. 213-240

19 Arteriosclerosis. O. M. Bourland, Van Buren.
20 Alcoholic Neurosis. S. W. Colquitt, McKamie.
21 Congenital Pyloric Obstruction. T. W. White, St. Louis.
22 Preventive Medicine. A. E. Turrentine, Blytheville.

Bulletin of Johns Hopkins Hospital, Baltimore

March, XXVII, No. 301, pp. 63-92

23 *Acidosis. J. Howland and W. M. Marriott, Baltimore.
24 Use of Suction in Postoperative Treatment of Bladder Cases. J. W. Churchman, New Haven, Conn.
25 *Relation of Angiogenesis to Ossification. E. Moschcowitz, New York.
26 Pressure of Bile Secretion During Chronic Obstruction of Common Bile Duct. W. T. Mitchell, Jr., and R. E. Stifel, Baltimore.

23. **Acidosis.**—Acidosis, Howland and Marriott say, is not an uncommon condition in infancy and childhood; while it is especially frequent in the severe diarrheas of infancy, it may appear with a variety of diseases, and sometimes, apparently, alone. To recognize it with older children is not very difficult. The character of the respiration is usually sufficient to arrest attention and one or two relatively simple laboratory tests will quickly determine the question one way or the other. With infants who are irritable, restless and crying, it is much more difficult to say whether hyperpnea is present; and yet with them it is most important to make the diagnosis early, for the reason that acidosis is such a fatal complication of diarrheal disease in infancy. Older children react promptly and often permanently to alkali therapy. It may be possible to stop the clinical and laboratory evidence of acidosis in infants, but the patients usually die. Why they do cannot be determined at the present time, the authors say. Many normal processes have undoubtedly been inhibited, perhaps permanently, and many abnormal ones stimulated. A restoration to normal conditions seems nearly impossible. For this reason, do not wait until acidosis can be demonstrated. From the beginning give bicarbonate of soda to infants with severe diarrhea in sufficient quantity to render the urine alkaline and keep it so.

Howland and Marriott would lay down a general maxim that as hyperpnea indicates acidosis, so hyperpnea indicates alkali therapy, and this for infants or older children. The alkalies may be given by mouth, by rectum, subcutaneously or intravenously. Vomiting and diarrhea frequently render their administration by mouth or by rectum out of the question. Then one of the other methods must be employed. Intravenous administration is the method of choice, especially when rapidity of action is desired; and with acidosis, rapidity of action is always desired. The superior longitudinal sinus is available with infants, or the external jugular or femoral veins. With older children, a vein in the arm can often be employed. If facilities for the intravenous injection of alkali are not at hand, the injection may be made subcutaneously, with care that the bicarbonate has not been transformed into the carbonate, else severe sloughing of the tissues may result. A 4 per cent. solution is usually employed for intravenous use and a 2 per cent. solution for subcuta-

neous use. The quantity to be injected depends on the size of the child, the severity of the symptoms and the effect produced, but the amount is always large. It must be given until the urine becomes alkaline; even in infants under 1 year, as much as 10 gm. in twenty-four hours may be required. With the cases of acetone body acidosis, with no sugar in the urine, and with a low sugar content of the blood, glucose by the rectum, subcutaneously or intravenously seems clearly indicated in addition to the alkali. With all forms water is urgently required, especially with infants who are desiccated as a result of the vomiting and diarrhea.

25. **Relation of Angiogenesis to Ossification.**—Three cases of calcification and two of ossification of the ovary are described by Moschcowitz. The process in each instance involved a corpus albicans. The specimens represented an apparently continuous series, in which four stages are recognizable: (1) an early discrete multiple deposit within a healed corpus luteum; (2) a definitely circumscribed deposit of amorphous lime within a corpus albicans; (3) the formation of primary haversian canals, which is accomplished by the genesis of an active mesoblastic tissue, both on the surface and within the interior of such a circumscribed lime deposit. This mesoblastic tissue is derived from the adjacent blood vessels of the ovary, and the predominant activity is the development of new blood vessels. Associated with this activity is the development of osteoblasts from the mesenchymal cells; (4) true bone formation with maturation of all the elements described above, together with eccentric deposition of bone plates around the primary haversian canals and the formation of marrow. Moschcowitz is of the opinion that the development of new blood vessels affords the keynote to the interpretation, in terms of cellular ontogeny, of the process of ossification. The histologic constituents which enter into the formation of new blood vessels are the progenitors of all the histologic components of osseous tissue. In other words, blood vessels, osteoblasts, bone cells and marrow (in large part at least) are merely differentiations of the mesenchymal cell unit. Moschcowitz' specimens furnish strong corroboration of the "adaptive" or "mesenchymal" theory of angiogenesis, and to the theory of the nonspecificity of endothelium. He says that ossification does not occur without preliminary calcification, and calcification occurs only in dead tissue; therefore, there is no valid reason for regarding bony structures within the ovary as blastomas.

California State Journal of Medicine, San Francisco

February, XIV, No. 2, pp. 43-84

27 Traumatism of Brain. A. Weeks, San Francisco.
28 Anoci-Association; Plea for Surgical Patient. A. B. Cooke, Los Angeles.
29 Leukopenia: Its Relation to Orchitis; Case Report. J. H. Catton, San Francisco.
30 Clinical Records. E. S. Kilgore, San Francisco.
31 Is Rabies Under Control in California? J. C. Geiger, Berkeley.
32 Prognosis of Prostatitis. M. Silverberg, San Francisco.
33 Criminal Abortions and Medical Profession. C. D. Ball, Santa Ana.
34 Results of Thirty-Five Transfusions. S. T. Pope, San Francisco.
35 Physician and Adaption Law in State of California. S. A. Queen, San Francisco.

Canadian Medical Association Journal, Toronto

February, VI, No. 2, pp. 97-192

36 Twilight Sleep. J. W. Duncan, C. Holbrooke and G. W. Phelan, Montreal.
37 *Eclampsia. D. J. Evans, Montreal.
38 Psychoneuroses. B. E. McKenzie, Toronto.
39 Cystic Hygroma in Infant. M. H. V. Cameron, Toronto.

37. **Eclampsia.**—In a series of thirty-eight cases of toxemia of pregnancy, in which Evans studied the blood pressure findings, he placed the danger limit of pressure at 160 mm. As his experience increases he says he is surprised at the number of cases in which the general symptom complex indicates a very considerable degree of toxemia, while the blood pressure readings are comparatively low. A serious grade of pregnancy toxemia may exist while the blood pressure remains approximately normal. As regards treatment, every individual case must be studied, and no single method of treatment is applicable to all. In the presence of evident symptoms of toxemia in the later months of pregnancy, associated with albuminuria and casts, and an increased blood pressure, eliminative and sedative treatment is indicated. One must rely on milk, diet, hot baths, the copious use of fluids and purgatives associated with rest in bed, to bring about improvement. If there be no improvement, indicated by the subsidence of the albuminuria, reduction of blood pressure and disappearance of the general symptoms of toxemia, then labor should be induced. Venesection, sweating, the employment of morphin and chloral in moderate doses, with purgation and the free use of fluids, constitute the treatment of a case of actual convulsions. In cases at or near term active surgical methods of delivery may be undertaken, but only to save the life of the child, as such operations unless attended with considerable hemorrhage seem to have but little influence in relieving the condition of the mother.

Cleveland Medical Journal

January, XV, No. 1, pp. 1-82

40 *Results Obtained with Salvarsan Intravenously and with Autosalvarsanized Serum Intraspinously in Treatment of Syphilis of Central Nervous System. R. Dexter, Cleveland.
41 Analysis of Death Certificates Which Were Returned to Physicians for Correction by Division of Health, City of Cleveland, January 1 to June 30, 1915. G. E. Harmon, Cleveland.
42 Conservatism and Radicalism in Surgery of Ear, Nose and Throat. S. H. Large, Cleveland.

40. **Treatment of Syphilis of Central Nervous System.**—Dexter is convinced that there are cases in which an arrest of the process may be accomplished by the use of mercury alone. On the other hand, he says, there are a very definite number of cases of syphilis of the central nervous system in which the action of mercury is positively detrimental. In these cases, salvarsan frequently acts extremely well and is an invaluable addition to the physician's armamentarium. There are many instances in which the process may be arrested by the intravenous injection of salvarsan alone. These are usually meningovascular involvements, and the best results are to be expected in the early cases, especially those which have begun to have symptoms, but in which the physical signs of the disease are either absent or slight. Whether the abolition of all the serologic signs of the disease can be expected under the intravenous administration of salvarsan is, so far as his experience goes, still open to doubt. When mercury given intramuscularly or the intravenous injections of salvarsan have failed to arrest the process satisfactorily, the intraspinal administration of autosalvarsanized serum will have a markedly beneficial effect in a large proportion of cases. The form of affection most amenable to treatment is that with meningovascular involvement. The greater the central degeneration the less can be expected from treatment, for there is no drug which can reestablish nerve tissue once it has been destroyed. As it is often difficult to differentiate clinically between these types of the infection, active and intensive treatment should be tried in most cases. It is probable, however, that very little can be done in most cases of general paresis. Dexter regards the Swift-Ellis method for the intraspinal administration of autosalvarsanized serum, when carefully administered and rigidly adhered to, as a safe and eminently proper procedure for the combating of syphilis of the central nervous system.

Georgia Medical Association Journal, Augusta

February, V, No. 10, pp. 227-251

43 Autogenous Bone Grafts in Nonunion and Malposition of Fractures of Long Bones. W. S. Goldsmith, Atlanta.
44 Treatment of Choice in Fractures of Skull. C. E. Dowman, Atlanta.
45 Suggestions for Arousing and Maintaining Interest in County Medical Societies. W. C. Lyle, Augusta.
46 Necessity of State Prosecutor to Enforce State Medical Laws. J. W. Palmer, Ailey.
47 Injection of Alcohol into Superior Laryngeal Nerve Trunk in Painful Laryngeal Tuberculosis. E. C. Thrash, Atlanta.
48 Crusade for Health in Ware County. A. Flemming, Waycross.
49 Relation Local Society Should Bear to State Association. E. H. Minchew, Waycross.
50 Plea for All Time Health Officer in Every County. T. F. Abercrombie, Brunswick.

Illinois Medical Journal, Chicago

February, XXIX, No. 2, pp. 81-160

51 *Etiology and Prophylaxis of Cancer. H. T. Byford, Chicago.
52 Modern Diagnosis and Treatment of Cancer of Stomach. C. Beck, Chicago.
53 Important Elements in Leprosy Question in United States. E. L. McEwen, Chicago.
54 Chronic Running Ear. R. H. Brown, Chicago.
55 Some Advantages of Indian Intracapsular Cataract Operation. E. E. Edmondson, Mt. Vernon.
56 Swimming Pool Conjunctivitis. H. S. Gradle, Chicago.
57 Arthritis Deformans. G. F. Butler, Kramer, Ind.
58 Charcot's Joint. J. Y. Welborn, Evansville, Ind.
59 Roentgen Examination of Appendix. M. J. Hubeny, Chicago.
60 Tetanus: Report of Cases. J. Niess, Carmi.
61 Early Consideration of Paresis. G. W. Morrow, Anna.
62 Panama as Seen by Physician. I. L. Firebaugh, Robinson.
63 Laboratory Significance. J. R. Ledr, Chicago.
64 Practice Among Eskimo. B. H. Brown, Iroquois.
65 Symptoms. T. A. Jones, Eldorado.
66 Fracture of Elbow Joint. F. B. McCarty, Chicago.
67 Our Hospital. G. W. Ross, Watseka.
68 Pellagra: Report of Case. R. L. Kane, Raleigh.

51. Abstracted in THE JOURNAL, January 22, p. 303.

Indiana State Medical Association Journal, Fort Wayne

February, IX, No. 2, pp. 45-92

69 *Use and Misuse of Tinted Lens in Refraction. F. M. Ruby, Union City.
70 Vertigo. L. D. Brose, Evansville.
71 Diseases of Stomach and Duodenum. C. E. Caylor, Pennville.
72 Intraspinal Treatment of Neurosyphilis. B. M. Edlavitch, Fort Wayne.

69. Abstracted in THE JOURNAL, Oct. 16, 1915, p. 1396.

Kansas Medical Society Journal, Topeka

February, XVI, No. 2, pp. 33-64

73 Chronic Infection of Tonsils; Relation to Systemic Disease. W. R. Dillingham, Halstead.
74 Tonsillectomy in Acute Tonsillitis. T. L. Higginbotham, Hutchinson.
75 Theory of Function of Adenoids and Tonsils. T. A. Jones, Liberal.

Maine Medical Association Journal, Portland

February, VI, No. 7, pp. 253-292

76 Nervous Diseases and Their Relation to Eye. E. W. Taylor, Boston.

Missouri State Medical Association Journal, St. Louis

February, XIII, No. 2, pp. 51-100

77 Transplantation of Tibia in Spine for Kyphosis. B. Belove, Kansas City.
78 *Gastro-Enterostomy. H. E. Pearse, Kansas City.
79 Treatment of Irreducible Joint Fractures. E. F. Robinson, Kansas City.
80 Deviations of Septum. H. Bailey, Springfield.
81 Some Aspects of Relation of Medicine to Law. J. T. White, Springfield.
82 Preventive Medicine in Obstetrics. F. E. Wilhelm, Kansas City.
83 Vesalius and Practice of Medicine. F. J. Lutz, St. Louis.
84 Factors in Success or Failure of Small Hospital. R. E. Castelaw, Kansas City.
85 Indications for and Advantages of High Incision in Cesarean Section. F. H. Raab, Kansas City.
86 Industrial Training in Edinburgh for Crippled Boys and Girls. D. C. McMurtrie, New York.
87 Treatment of Gastro-Enteric Disease of Infants. H. A. Killion, Portageville.
88 Large Urethral Calculus; Rupture of Urethra; Extensive Extravasation of Urine. V. Berry, Okmulgee, Okla.

78. Abstracted in THE JOURNAL, June 26, 1915, p. 2161.

New York Medical Journal

February 19, CIII, No. 8, pp. 337-384

89 Shoes, Physiologic and Therapeutic. D. D. Ashley, New York.
90 Pedology and Its Possibilities. E. B. McCready, Pittsburgh.
91 Sir Kenelm Digby and His Powder of Sympathy. W. R. Riddell, Toronto, Canada.
92 Apparatus for Administration of Gas Oxygen. W. Walter, Chicago.
93 Diathermia; Physiologic Specific. A. C. Geyser, New York.
94 Clinical Significance of Gastric Analysis. L. W. Kohn, Philadelphia.
95 Autolysin. S. P. Beebe, New York.

February 26, No. 9, pp. 385-432

96 Syphilis and Internal Medicine. L. F. Barker, Baltimore.
97 Unsuspected Syphilis in Neurology. J. Collins, New York.
98 Medical Service in Organized Militia. W. S. Terriberry, New York.
99 Quinin and Urea Bichlorid in Toxemia of Pulmonary Tuberculosis. M. S. Cohen, Philadelphia.
100 Coroner and Physician. W. S. Wadsworth, Philadelphia.
101 Syphilis of Stomach. E. D. Holland, Hot Springs, Ark.
102 Gynecology. K. H. Goldstone, New York.
103 *Treatment of Typhoid with Bacterins. E. Waitzfelder, New York.

103. **Typhoid Treated with Bacterins.**—Fourteen patients were treated by Waitzfelder with bacterins and two ordinary, average cases with the average amount of toxemia and temperature were used as controls; that is, they received no bacterins and were treated symptomatically. All the patients were placed on high calory diet, the amount in children varying from 500 to 2,000 calories a day, and in adults from 700 to 3,000 calories a day. In every case the typhoid bacillus was recovered from the blood, feces, or urine. The injections were given intramuscularly. The doses varied from 66 to 800 millions, the larger dose apparently acting best. The period of convalescence was materially shortened; all the patients were in condition to resume their usual vocation within one month after leaving bed, the average invalidism therefore being less than nine weeks. From this limited experience Waitzfelder is inclined to think the administration of bacterins in typhoid is of service, in that it lessens the toxic symptoms.

New York State Journal of Medicine

February, XVI, No. 2, pp. 51-104

104 Sectionalism. F. M. Crandall, New York.
105 Treatment of Disturbances of Digestion in Infancy. J. L. Morse, Boston.
106 Spinal Manifestations of Syphilis. M. A. Starr, New York.
107 Radical Operation for Cervical Cancer: Report of Forty Cases. J. A. Sampson, Albany.
108 New Conception of Diabetes and Its Treatment. J. L. Heffron, Syracuse.
109 Pyorrhea Alveolaris and Some Modern Discoveries Regarding Its Causes and Treatment. F. E. Stewart, Philadelphia.
110 Repair of Complete Laceration of Female Perineum. C. G. Child, Jr., New York.
111 *Soy Bean in Infant Feeding. J. F. Sinclair, Philadelphia.

111. **Soy Bean in Infant Feeding.**—Sinclair's experience with soy bean leads him unhesitatingly to urge its usefulness in the treatment of summer diarrhea, in various intestinal disturbances and in marasmus. It is well borne, readily digested, and by reason of its fat and proteid content furnishes the necessary pabulum to nourish the sick infant. In a series of seventy-four cases, there were nineteen deaths, eleven cases were unimproved, while forty-four babies did well as evidenced by the improvement in their general condition, character of their stools or gain in weight. Some improved in all these particulars, others improved in their general condition and in the character of the stools, but did not gain in weight while they were in the hospital. All of these babies were under 3 years of age and were ill with summer diarrhea. Thirty-four were diagnosed gastro-enteritis; twenty-eight enteritis, and twelve ileocolitis. In thirty-eight cases, the condition of the patient on admission is noted in the records as varying from "bad" to "dying"; while in thirty-six cases it is recorded as from "fair" to "good."

Northwest Medicine, Seattle, Wash.

February, XV, No. 2, pp. 37-72

112 Cancer of Stomach. C. E. Sears, Portland, Ore.
113 Malignant Tumors of Gallbladder. J. E. Else, Portland, Ore.
114 Excision of Ulcer Bearing Area in Gastric Surgery. C. N. Suttner, Walla Walla.
115 Prevention and Cure of Cancer. K. A. J. Mackenzie, Portland, Ore.
116 Present Status of Treatment of Cancer. S. W. Mowers, Tacoma.
117 Clinical Study of Gastric and Duodenal Ulcer. G. F. Koehler and R. C. Walker, Portland, Ore.

Philippine Journal of Science, Manila

November, 1915, X, No. 6, pp. 357-394

118 Treatment of Retrogressive Skin Lesions of Leprosy with Basic Fuchsin. O. E. Denney, Culion, Philippine Islands.
119 Leprosy. J. A. Johnston, Manila.
120 Tropical Obstetric Problems. F. Calderon, Manila.
121 Study of Pathology of Gallbladder and Biliary Passages in Cholera. J. S. Coulter, U. S. Army.

South Carolina Medical Association Journal, Greenville

February, XII, No. 2, pp. 29-61

122 Therapeutic Value of Mineral Water. F. L. Parker, Charleston.
123 Interpretation of Certain Laboratory Findings. F. A. Coward, Columbia.
124 Experiences with Emetin in Dysenteric Conditions. H. L. Shaw, Fountain Inn.
125 Cardiospasm with Dilated Esophagus; Report of Case. J. W. Parker, Greenville.
126 Present Influenza Epidemic in New York. P. M. Allen and P. L. Hudson, New York.

Tennessee State Medical Association Journal, Nashville

February, VIII, No. 10, pp. 425-466

127 Some Pertinent Points in Vascular Surgery; Report of Cases. E. T. Newell, Chattanooga.
128 Skin Grafting. J. L. Crook, Jackson.
129 How Shall We Treat Appendicitis? M. C. McGannon, Nashville.
130 Normal Labor. J. Roberts, Kingston.
131 What Is the Matter with Hannah? W. K. Vance, Bristol.

Wisconsin Medical Journal, Milwaukee

February, XIV, No. 9, pp. 371-406

132 Advances in Otologic Diagnosis. S. J. Kopetzky, New York.
133 Influence of Manometric Pressure on Middle Ear. H. B. Hitz, Milwaukee.
134 Diagnosis of Incipient Mental Disease. F. M. Aplin, Waukesha.
135 Two Cases of Adenoma of Thyroid. J. J. Bellin, Green Bay.
136 Roentgen Ray Diagnosis in Diseases of Accessory Sinuses. E. A. Smith, Milwaukee.
137 Diagnostic Theses in Pulmonary Tuberculosis. L. Brown, Saranac Lake, N. Y.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

February 5, I, No. 2875, pp. 189-224

1 *Antenatal Clinics and Prematernity Practice at Edinburgh Royal Maternity Hospital, 1909 to 1915. J. W. Ballantyne.
2 *Immediate Treatment of Severe Postpartum Hemorrhage. R. K. Howat.
3 Cesarean Section in Pitman's Cottage. R. G. Bell.
4 Influence of Syphilis on Chances of Progeny. N. B. Harman.
5 Splint for Compound Fracture of Ankle. M. Sinclair.
6 Bronchopneumonia with Secondary Hemorrhagic Meningitis and Recovery. A. G. Shera.
7 Traumatic Rupture of Spleen, Splenectomy; Recovery. W. H. Cam.
8 Case of Traumatic Rupture of Spleen. E. H. Jones.
9 Case of Probable Spontaneous Rupture of Spleen. W. B. Ogilvie.

1. **Prematernity Practice at Edinburgh.**—The prematernity system of the hospital as it now exists is described by Ballantyne as follows: The prematernity ward is the center of the whole work, for without it all the rest would be ineffective. The other parts of the system are largely of the nature of sources of supply for the prematernity ward. They consist in the first place of the prematernity or prenatal nurses who come into touch with expectant mothers in the outdoor department of the hospital, and who, if necessary, recommend these "expectants" either to the antenatal clinic or to the prematernity ward. In the second place, there is the prematernity home for unmarried girls, in which such young pregnant women are kept under medical supervision, and can be sent either into the general wards when they pass into labor, or into the prematernity ward if they develop serious complications of gestation; in the third place, of the antenatal clinic, and, in the fourth place of the medical practitioners in the neighborhood, who, with steadily increasing frequency, are sending suitable patients of the working class into the hospital for prematernity treatment. The prematernity department of the hospital, naturally, is connected with the maternity portion, where the women are delivered of their infants and pass the days of the puerperium, and that again is reinforced by the baby clinics, to which the mothers are enjoined to bring their infants for supervision, weighing and advice, and by the postnatal home for the unmarried mother and her first child. At the same time these agencies are not necessarily all brought into action in any case. It is not essential, for instance, that a woman treated in the prematernity ward wait in the hospital for her confinement; she may be relieved of her trouble while in the pregnancy ward, and thereafter return to her own home for her confinement; and this is not an infrequent occurrence in the case of maladies early in pregnancy, such as threatened abortions and troublesome vomiting.

2. **Treatment of Severe Postpartum Hemorrhage.**—Howat emphasizes the great importance of high elevation of the pelvis as a primary measure in the treatment of this condition, because it promptly, simply and effectively deals with the immediate cause of great danger; and continues to act in the promotion of the patient's subsequent recovery. Elevation of the pelvis not only automatically lessens or arrests bleeding, it also by gravity drives the unshed venous blood back to the heart and facilitates the flow of blood to the brain, in both of these ways stimulating circulation and respiration at precisely the time when this is most urgently needed. The elevated position recommended greatly facilitates the rapid introduction and retention of hot saline solution. The degree of elevation advocated may suggest a risk of air embolism from "adspiration" into the uterus and thence to the uterine veins on withdrawal of the vaginal hand. Whatever this risk might be, it is counteracted by two precautions, namely, (1) uterine contraction; the hand is not to be withdrawn from the vagina until this natural preventive is in active operation; while it is so in operation air may enter the vagina, but cannot enter the uterus; (2) closing the vaginal orifice with a wet pad on the vulva as the hand is withdrawn.

Edinburgh Medical Journal

February, XVI, No. 2, pp. 89-168

10 Congenital Kyphosis. D. M. Greig.
11 Use of Hypochlorous Acid (Eusol) in Gunshot Wounds. A. Miles.
12 *Lung Lesions in Aortic Aneurysm. B. Bramwell.
13 Notification of Births (Extension) Act. W. Robertson.
14 Case of Lacerated Wound of Thigh Treated by Eusol. A. Miles.

12. **Lung Lesions in Aortic Aneurysm.**—The following cases are cited by Bramwell: (1) large aneurysm of the descending thoracic aorta, the cavity of which was almost completely filled with a very dense old clot; complete consolidation of the left lung due to the pressure of the aneurysm on the root of the left lung and left bronchus; physical signs suggestive of pleuritic effusion and malignant disease of the lung; the sac of the aneurysm aspirated on three separate occasions, 20, 20 and 10 ounces of pure blood being withdrawn; (2) chronic pneumonia due to the pressure of a small aneurysm on the root of the left lung and left bronchus; (3) large aneurysm of the descending thoracic aorta; pressure on the root of the left lung and left bronchus; consolidation of the left lung; (4) aneurysm of the thoracic aorta; pressure on the root of the right lung and obstruction of the right bronchus; retraction and consolidation of the right lung; retained secretion in the bronchi; no tubercle; (5) aortic aneurysm; pressure on the root of the left lung and left bronchus; consolidation of the left lung (chronic pneumonia); no phthisis; (6) aneurysm at the termination of the transverse portion of the aortic arch and descending thoracic aorta; consolidation of the left lung (chronic pneumonia and bronchiectasis); pressure on the root of the left lung; obstruction of the left bronchus; (7) aortic aneurysm; consolidation of the right lung (chronic pneumonia); pressure on the root of the right lung and right bronchus; (8) aortic aneurysm; pressure on the root of the right lung and right bronchus; consolidation of the right lung; (9) large aortic aneurysm pressing on the root of the left lung; (10) aortic aneurysm pressure on the right bronchus; consolidation of the lung; chronic pneumonia; (11) fusiform dilatation of the ascending thoracic aorta and transverse portion of the aortic arch; large sacculated aneurysm at the junction of the transverse with the descending thoracic aorta; compression of the root of the left lung and left bronchus; erosion of the ribs and vertebrae; acute phthisis, with numerous tubercle bacilli in the sputum and extensive cavities in the left lung; (12) aortic aneurysm; extreme collapse with slight interstitial overgrowth of the left lung; advanced chronic interstitial nephritis; (13) aortic aneurysm; phthisis; sputum contains tubercle bacilli.

Indian Medical Gazette, Calcutta

January, LI, No. 1, pp. 1-40

15 Two Madras Medical Lists. D. G. Crawford.
16 *Reduction of Mortality of Cholera to 11 Per Cent. by Addition of Atropin Hypodermically to Hypertonic and Permanganate Treatment. L. Rogers.
17 Conjunctival Flaps in Cataract Operations. H. Smith.
18 Typical Case of Hysteria; Its Treatment and Cure. A. W. Overbeck-Wright.
19 Hysteria (?) in Young African. A. B. DeCastro.
20 Treatment of Kala-Azar and Cases Treated with Metallic Antimony, Antimonyl Sodium Tartrate, Formaldehyd and Other Drugs. R. U. N. Brahmachari.
21 Case of Anthrax Treated Successfully by Phenol. C. B. McConaghy.
22 Case of Aneurysm of Descending Thoracic Aorta Extending into Right Pleural Cavity and Right Side of Abdomen. T. S. Tirumurti.

16. **Treatment of Cholera.**—Rogers summarizes his present treatment thus: On admission give $\frac{1}{100}$ grain of atropin sulphate hypodermically and repeat it morning and evening. Take the specific gravity of the blood, the blood pressure and temperature in mouth and rectum. If the blood pressure is not over 70 mm., or the specific gravity is 1.063 or over, give an intravenous injection of sterile hypertonic saline of three, four, five, or even six pints, in accordance with whether the specific gravity is 1.063, 1.064, 1.065 or 1.066 and over in male adults, and correspondingly less in females and children in proportion to their approximate weights. Unless the rectal temperature is below 99 F. the saline should never be injected at above blood heat (98 F.) for fear of producing hyperpyrexia. If the rectal temperature is 100 F. or over, the fluid should be given at a temperature between 80 and 90 F. The hypertonic solution should contain 120 grains (8 gm.) of sodium chlorid and 4 grains (0.4 gm.) of calcium chlorid. Permanganate of potash is to be given in 2 grain pills, made up with kaolin and petrolatum and preferably, coated with salol or keratin, two pills every quarter of an hour for two to four hours, in accordance with the severity of the case, and then two every half-hour until the stools change to green or yellow and become comparatively small. Barley water and plain water by the mouth in small quantities at a time (3 or 4 ounces) should be given frequently, but no other food during the attack. Normal saline (sodium chlorid, 90 grains to a pint) half a pint every two hours by the rectum should be given until the collapse stage is passed and urine is being excreted regularly, and then reduced in frequency to every four hours and continued until two pints of urine are passed in twenty-four hours.

The fall of the blood pressure to 70 and under, or the rise of the specific gravity to 1.063 or above are indications for a repetition of the intravenous injection. At each repetition of the injection, and at the first injection in all patients admitted late with suppression of urine for twenty-four hours or more, give one pint of the following alkaline solution: sodium chlorid 60 grains, and sodium bicarbonate 160 grains (2 per cent.), and continue with the ordinary hypertonic solution up to the total amount indicated by the specific gravity of the blood. The alkaline solution counteracts the tendency to acidosis, which is the most essential cause of postcholeraic uremia. If the urinary excretion is deficient in the later stages with a blood pressure of 100 mm. or more and a specific gravity below 1.063 but not much below the normal point of from 1.056 (in Indians) to 1.058 (in Europeans), give one pint of the above alkaline solution either subcutaneously, or better intravenously, to increase the urinary flow. The alkaline solution in such cases should also be given by the rectum, instead of normal saline. If the blood pressure remains persistently much below 100 mm. and urine is deficient, give pituitary extract hypodermically and caffein sodium salicylate in 5 grain doses by the mouth every four hours, and dry cup and foment over the kidneys repeatedly. In very young children and feeble old patients glucose may be given in the rectal saline to support the strength.

Lancet, London

February 5, I, No. 4823, pp. 281-330

23 Clinical Thermometry. (To be continued.) G. S. Woodhead and P. C. Varrier-Jones.
24 Use of Gynocardates Orally and Subcutaneously in Leprosy. L. Rogers.
25 Two Cases of Fourth Disease with Relapses. O. J. W. Adamson.
26 Case of Abscess of Myocardium Resulting in Aortic Leakage into Right Heart. R. D. Rudolf and V. H. K. Moorhouse.
27 Examination of Soldier's Heart. O. Leyton.
28 New Combined Physical Treatment for Wounded and Disabled Soldiers. R. F. Fox and J. C. McClure.

Sei-I-Kwai Medical Journal, Tokyo

January, XXXV, No. 1, pp. 1-4

29 Two Cases of Rat Bite Treated by Salvarsan. K. Nakasone.

Bulletin de l'Académie de Médecine, Paris

January 25, LXXV, No. 4, pp. 91-106

30 Pyoculture. (Renseignements et indications fournis par la pyoculture.) P. Delbet.
31 Partial Tetanus, Restricted to Left Leg. (Tétanos partiel précoce, localisé au membre inférieur gauche.) Courtois-Suffit and R. Giroux.

Lyon Médical, Lyons

December, 1915, CXXIV, No. 12, pp. 377-408

32 Gunshot and Shell Wounds of the Chest: the Hemo-Pleuro-Pneumonic Syndrome; Fifty-Three Cases. M. Piéry. To be continued.

Paris Médical

January 29, VI, No. 5, pp. 113-128

33 *Hypertrichosis After Traumatism of Limbs With or Without Nervous Lesions; Forty-Four Cases. Lebar.
34 *Wounds from Small Flying Scraps of Shells. (Les plaies de guerre par petits projectiles.) H. Roulland.
35 Double Pulley Exerciser for Mechanotherapy After Wounds in War. (La mobilisation méthodique par les appareils de fortune.) P. Kouindjy.

33. **Hypertrichosis After Traumatism.**—Lebar relates that among the 281 wounded he has had in his charge at an improvised hospital for wounds of nerves, 44 of the men had an abnormal growth of hair on the limb affected. Several illustrations are given of this hypertrichosis, and the explanation is advanced that the prolonged immobilization had compromised the vital specific functioning of the muscle, whether this immobilization had been from the dressings applied, or the men had refrained from using the limb for fear of its hurting, or there was paralytic impotence. The absence of the normal play of the muscles involved upset the regulating balance and entailed the trophic disturbance. The hypertrichosis was on the wrist and back of the hand in 16 cases in which the radial nerve had been injured; in 5 cases the sciatic nerve had been injured, in 5 the ulnar nerve and once the brachial plexus. The hypertrichosis never seemed to correspond to the course of the nerve or its peripheral distribution nor to any root innervation. In 8 cases the wound had not apparently injured any nerve; in 2 cases the hypertrichosis developed early in neuropathic paralysis. These latter cases suggest that these and other trophic troubles are due to injury of the fibers of the sympathetic nerve which accompany the vessels, the injury being from lack of the normal trophic reflex impulses owing to the immobility of the muscles involved. Traumatic hypertrichosis is thus another phenomenon to call attention to the dangers of too absolute immobilization. (See editorial THE JOURNAL, Jan. 22, 1916, p. 281.)

34. **Wounds from Small Projectiles.**—Roulland refers to flying scraps of shells or of bullets, slivers of wood or pebbles driven by the force of an explosion. The wounds thus made are characterized by the apparent insignificance of the injury, the depth to which the projectile penetrates, and the rapidity and gravity of the inevitable infectious phenomena. Treatment requires removal of the foreign body and provision for ample draining. He has found hot water of great assistance in treatment of wounds in war, either as local baths or moist dressings or as a spray. It seems to have a wholesome trophic action on bruised and mortified tissues, especially when supplemented with hydrogen dioxid.

Presse Médicale, Paris

January 27, XXIV, No. 5, pp. 33-40

36 *Treatment of Malaria. (Le traitement du paludisme.) H. Vincent.
37 Pyoculture Not Reliable. S. Pozzi and Agasse-Lafont.
38 *Graphic Method for Recording Extent of Atony and Paralysis. L. Lortat-Jacob and A. Sézary.

January 31, No. 6, pp. 41-48

39 Indications for Operation Deduced from Histologic Examination of Wounded Nerves. P. Marie and C. Foix.
40 *Ethyl Chlorid Anesthesia in Treatment of the Wounded. (L'anesthésie prolongée au chlorure d'ethyle dans la pratique des grands pansements.) Savariaud.

February 3, No. 7, pp. 49-56

41 Principles for Construction of Artificial Limbs and Preparation of the Stump. (Les appuis des appareils prothétiques et les procédés d'amputation.) A. Broca.
42 Technic for Puncture of a Vein. (La ponction veineuse. Le moyen de ne pas faire de "ponction blanche.") H. Godlewski.

36. **Malaria.**—Vincent remarks that the present campaign in the Balkans, Greece and Turkey is exposing the soldiers to danger of malaria, and he reviews the present status of knowledge as to the exact technic for warding it off and treating it. In the Mediterranean countries, malaria is apt to assume a continuous type, and for this he advocates one or two subcutaneous injections of quinin daily until defervescence. A saline purgative is given also and, when the fever has subsided, quinin is continued by the mouth for several days, on the alert to detect any relapse, as this type is peculiarly rebellious. Vincent recalls that he has established the efficacy or 3 or 4 gm. a day of calcium chlorid in warding off and treating hemoglobinuric bilious fever.

38. **Graphic Record of Atonic and Paralytic Conditions.**—A long narrow strip of sheet lead is fitted over the ankylosed or paralyzed limb, molded to its contour. The strip is then laid on paper and its inner curving outline traced on the paper. By repeating this at intervals the improvement under treatment can be traced with precision. Three of these goniograms, as Jacob and Sézary call them, are reproduced.

40. **Ethyl Chlorid Anesthesia for Changing Dressings.**—Savariaud comments on the difference between the dressings of peace and those required for extensive, ragged shell wounds. When the dressings on these large shell wounds are changed, an anesthetic cannot be dispensed with, and he has found ethyl chlorid best adapted to the purpose for reasons which he enumerates. He protects the patient's eyes with a pad of four or five thicknesses of gauze, and then lays a square of oiled silk over the head, large enough to cover the face and tuck the four corners under the head. A small hole is made in it only large enough to admit the tip of the ethyl chlorid tube. By spraying it gently, progressive and continuous anesthesia is realized, and it can be kept up at the rate of 1 c.c. for each minute of the anesthesia.

Berliner klinische Wochenschrift

Nov. 22, 1915, LII, No. 47, pp. 1201-1224

43 Sarcomatosis of Lymphatic Gland System in Man of 58. (Primäres, generalisiertes Spindelzellsarkom der Lymphdrüsen.) P. v. Baumgarten.
44 Deforming Arthritis as an Affection of the Cartilage. (Die deformierende Gelenkentzündung im Lichte neuer Forschung.) G. Axhausen.
45 Bullet from the Rear Lodged in Heart Wall; No Appreciable Disturbance. R. Mühsam.
46 Action on Tissues of Intensive and Deep Radiotherapy. (Zur Strahlentiefenwirkung.) F. Heimann.
47 Later Course of Wounds of the Skull. (Zur Klinik der Schädelschüsse nach den Erfahrungen im Heimatlazarett.) E. Hayward. Commenced in No. 46.
48 Perforation in Extremely Mild Typhoid Without Agglutination. (Bemerkenswerter Fall von Unterleibstyphus.) L. Mahn.
49 Excision of Venereal Ulcer With Laryngologists' Flat Actual Cautery. F. Fuchs.

January 10, LIII, No. 2, pp. 29-52

50 *Itching With Inflammatory Exudation. (Entzündliche Exsudation und Jucken.) P. G. Unna.
51 Treatment of Infected Wounds of Bones and Joints. (Zur Behandlung der inficierten Knochen- und Gelenkschüsse.) W. Körte.
52 *Injections of Fibrin to Stimulate the Periosteum to Production of Callus. (Behandlung der verzögerten Callusbildung und der Pseudarthrosen mit Fibrininjektionen.) S. Bergel.
53 Ultrafiltration of Drugs. (Ultrafiltrate, eine neue Arzneiform.) F. Blumenthal.
54 *Intensive and Rapid Treatment of Syphilis. (Die Syphilisbehandlung zur Kriegszeit, und was soll nach Friedensschluss geschehen, die Zivilbevölkerung vor der Infektion durch venerisch kranke Heimkehrende zu schützen.) M. von Zeissl.
55 Classic Cesarean Section on a Dwarf. (Klassischer Kaiserschnitt bei einer Zwergin.) W. Nagel.
56 *Indications for Venesection. (Einige Indikationen der Aderlassbehandlung.) A. Theilhaber.

50. **Itching with Inflammatory Exudation.**—Unna here discusses prurigenous skin affections of the type of prickly heat, prurigo and vesicular eczema. There are three factors involved, the solid horny layer, the exudation in the prickle cell layer and the hyperemia in the papillary body. (See summary of his previous communications January 15, p. 227). The hyperemia is best combated, he says, with dry cold; rubber bottles with cold water are better than moist cold. Cold from evaporation can also be utilized, first applying a paste as indicated for the eczema, and over this a dressing kept constantly wet with water or a solution of aluminum acetate. With this combination of a drying paste and evaporation, the eczema vesicles dry up while the coolness from the evaporation combats the hyperemia and the horny layer softens under the influence of the moisture. The dressings also protect the region against injury from scratching.

52. **Fibrin Injections to Promote Development of Callus.**—In cases of delayed healing of fractures and for pseudarthrosis Bergel makes local injections of fibrin obtained from blood drawn from horses. He gives a number of roentgenograms which apparently demonstrate that by this means the production of callus is stimulated and pseudarthrosis corrected.

54. **Abortive Treatment of Syphilis.**—Von Zeissl states that among his last series of 3,000 syphilitic patients he has 26 who were given treatment when only the primary sore was evident and there have been no further manifestations to date and the Wassermann has been persistently negative. He urges that when the army disbands, after the war, each soldier should be given the Wassermann test and have a culture made from the urethral secretions. Only when these are or become negative should he be discharged to return home. This is the only way to protect the wives against possible sterility from gonorrhea and the offspring against the taint of syphilis.

56. **Indications for Venesection.**—Theilhaber relates that he has applied venesection 450 times in the last eight years. He has found it extremely useful for the hot flashes of the menopause. It never did harm, but was not invariably effectual. It helped in some cases of dysmenorrhea, but others did better with resection of the sphincter of the internal os. Venesection relieved sometimes in cases of intermenstrual colic; in two women who had never borne children roentgenotherapy benefited more, and in two others resection of the sphincter of the internal os. The benefit from venesection generally persisted for from three to six months; then he sometimes had to repeat it. He drew usually from 300 to 500 c.c. of blood. The women were able to leave the office in half an hour afterward, without feeling weak. Venesection has also done him good service in treating neuralgia and neuroses, especially nervous headache in the plethoric. Another indication for venesection is as an adjuvant to diathermia in prophylaxis of recurrence after operations for cancer. He noticed once that recurrence was rare in patients who lost much blood during the removal of their cancer. Since then he gives periodical venesections for the purpose of stimulating the blood-producing organs, usually twice a year, withdrawing 400 or 500 c.c. of blood. Fichera's recent experiments on animals confirm that periodical venesections enhance the resisting power against inoculation of cancer. Theilhaber is convinced that cancer develops by preference in anemic tissues. The slight transient anemia from the venesection is soon followed by a wave of greater production of blood.

Correspondenz Blatt für Schweizer Aerzte, Basel

January 8, XLVI, No. 2, pp. 33-64

57 Indications and Technic for Radium and Mesothorium Exposures. E. Sommer.
58 Activation During Pregnancy of Tuberculosis Otherwise Latent E. Meyer.

January 15, No. 3, pp. 65-96

59 *Continuous Extension With Muscles Relaxed in Semiflexion as Aim in Treatment of Fractured Limbs. (Zur Behandlung der Knochenbrüche der Extremitäten.) A. Wettstein.

59. **Treatment of Fractures.**—Wettstein expatiates on the advantages of continuous extension with the muscles relaxed

in semiflexion, and urges that it is immaterial how this is realized. The general practitioner can improvise ways and means, as most convenient, to apply this principle.

Deutsche medizinische Wochenschrift, Berlin

January 20, XLII, No. 3, pp. 61-92

60 *The Vomiting of Pregnancy a Toxicosis Plus a Nervous Predisposition. (Behandlung des sog. unstillbaren Erbrechens in der Schwangerschaft.) P. Jung.
61 *Noninfectious Internal Diseases in War and Peace. (Nichtinfektiöse innere Krankheiten im Krieg und Frieden.) M. Mosse.
62 Internal Medicine and the War. (Ergebnisse der bisherigen Kriegserfahrungen auf dem Gebiete der inneren Medizin.) P. Reckzeh. Concluded in No. 4.
63 War Hysteria. (Kriegshysterie.) S. Meyer.
64 *Duodenal Ulcer. (Kritische Bemerkungen zur Diagnose und Therapie des Ulcus duodeni.) I. Boas. Commenced in No. 2.
65 Does Modern Bread-Making Conform to Biochemical Laws? (Entspricht die jetzige Broterzeugung den modernen biochemischen Forschungen der menschlichen Ernährung?) J. Stoklasa.
66 *Intradermal Tuberculin Reaction in Diagnosis of Tuberculosis in Guinea-Pigs. (Der Wert der Intrakutan-Tuberkulinreaktion bei Meerschweinchentuberkulose.) H. Selter.
67 Technical Suggestions for Injections and Infusions. W. Alter.
68 *Bulging of Supraclavicular Fossa With Plethora. (Die plethorische Vorwölbung der Supraklavikulargrube.) C. Trunecek (Prague).

60. **Uncontrollable Vomiting of Pregnancy.**—Jung emphasizes the importance of discriminating between the ordinary and harmless vomiting in pregnancy and the serious type. The loss in weight is the criterion, but this must be determined with precision, weighing the woman every third day under like conditions and on a good scale. The best time for this is following defecation after breakfast, the clothing always the same. The amounts eaten must be recorded in writing for each meal, and the vomit must be saved to show the physician. To prevent ordinary vomiting from developing into the severe type, he orders the breakfast to be taken in bed, with an hour's repose afterward. Food should be taken often and never much at a time, preferring fluid food at first but resuming the ordinary food as soon as possible, omitting all dishes which the woman does not like in health, impressing on the patient that if the directions are closely followed there will be no vomiting. The stomach is not responsible in any way for the vomiting, and hence does not require special treatment. In the severe type we must stop all intake of food and fluid. This is difficult and sometimes impossible in the home; if the woman is really losing weight, she should be placed where the starvation treatment can be given a thorough trial before resorting to the evacuation of the uterus. The transference to the hospital in itself has a pronounced effect on the nervous predisposition. In the hospital the woman is kept constantly in bed and fed at first with fluid, small amounts at a time, and very cold. Alcohol may be given but is by no means necessary. In the severer cases Jung allows only ice cold milk, by the teaspoonful, every half hour or hour, relieving the thirst with ice pills (made in a test tube with a refrigerating mixture). If the vomiting persists, nothing should be allowed by the mouth for a day, and four nutrient enemas should be given instead. These are disagreeable to the patient and sometimes the vomiting stops abruptly when she is told that mouth feeding will be resumed when she stops vomiting.

If the woman is restless and cannot sleep, small subcutaneous doses of morphin, 0.005 gm. three times a day, may render good service; opium by the mouth is seldom retained in these cases. He lays stress on the importance of suggestion, saying that all the measures should be applied impressively to influence the patient subjectively. Lavage of the stomach may prove useful on this account; also subcutaneous saline infusion. This has the further advantage of combating the water-starvation of the tissues. The signs of actual danger are the continual rapid decline in weight, declining blood pressure with increasing pulse rate, appearance of acetone in the urine and of febrile temperatures. If these signs persist, in spite of proper dietetic measures, abortion will have to be induced. He warns that this should not be postponed until the patient is unable to stand the necessary maneuvers. The written consent of the patient and family should be obtained, and it is safer to call in some experienced confrère. Jung prefers to empty the uterus at one sitting, under ether, using Hegar tents or slitting the anterior wall of the uterus, to clear it out, then suturing at once. In conclusion he reiterates that success depends mainly on the "professional imponderables," and that the stomach and uterus should be left alone as long as possible; also that it is necessary to exclude beforehand gastric ulcer, nephritis and disease of the central nervous system as the cause of the uncontrollable vomiting. He warns incidentally that the patient or the family often have a special interest in getting the pregnancy interrupted, and the physician must be on the alert to guard against this tendency.

61. **Noninfectious Internal Diseases in War and Peace.**—Mosse states that in the army hospital in his charge at Berlin during 1915, four men of the 1,427 between 18 and 30 had diabetes. In one man with a tuberculous process in the lung, the diabetes had developed abruptly. In a corresponding series of men between 18 and 30 during the two years before the war, only one had diabetes. Nephritis was encountered in 4.3 per cent. of 2,300 men sent to the hospital from the eastern seat of war, and it was of a hemorrhagic type in most. This same hemorrhagic type is predominant also at present in the Vienna hospitals, among both soldiers and civilians. Mosse found a cancer in the stomach in three men of 31, 33 and 34, and the growth proved inoperable in two at the biopsy. In a fourth case the man of 36 succumbed to metastasis from a hypernephroma. A number of the soldiers returning from the eastern front developed mild febrile temperatures at times for which no cause could be incriminated unless possibly the food after the deprivations of active service. Alimentary fever is known in children, and this may be of the same type. One of the cases reported warns that kaolin may inflict mechanical injury if there is unsuspected typhoid. Severe intestinal hemorrhage followed the third and fourth day after 200 gm. had been taken on two successive days to relieve diarrhea and abdominal pain. Typhoid bacilli were found then in the stools.

64. **Duodenal Ulcer.**—Boas insists that the outcome of gastro-enterostomy for duodenal ulcer is not always the success generally credited to it. Reexamination months later will often reveal the presence of occult blood. This is an objective sign that normal conditions have not been restored. Only when the gastro-enterostomy banishes the occult hemorrhages so that tests for it months and years later are persistently negative, can we speak of an actual permanent cure. It would strengthen the standpoint of those surgeons who regard gastro-enterostomy as a sure cure for duodenal ulcer if such testimony could be adduced, but Boas' experience is against it. His view is that the gastro-enterostomy merely provides conditions which facilitate the success of a course of treatment for the ulcer. Operative treatment for recurring or intractable duodenal ulcer may be necessary, but to advocate it for every case is going too far, he thinks, unless we can present evidence that occult hemorrhage is permanently arrested by it.

66. **The Intradermal Tuberculin Reaction in Guinea-Pigs.**—Selter has been conducting extensive research under a subsidy from the Koch fund and reports that a positive reaction at first may veer to negative in the course of a few months, indicating that the experimental tuberculosis has undergone a spontaneous cure. On the other hand, a positive reaction is a sign of the presence of tuberculosis but a negative reaction by no means excludes actual tuberculous infection.

68. **Bulging of Supraclavicular Fossa as Sign of Plethora.**—Trunecek emphasizes the importance of this sign of overfilling of the cardiovascular apparatus. It reveals the existing plethora when the person seems to be entirely normal. The plethora, however, is an element of danger, especially in case of intercurrent febrile disease, etc. The fossae may bulge with constitutional disease, nephritis, arteriosclerosis, etc., and it is always a sign that the vascular system is overfilled and hence that there is imminent danger of cerebral hemorrhage. This is exceptionally dangerous when it occurs with plethora, as more blood pours out of the ruptured vessel than under other conditions. With what he calls spastic hypertension, that is, a high blood pressure from contraction of small arteries with muscular walls, the fossae do not bulge,

even when the capillary pressure may be as high as 200. He describes a case of "serum plethora" in which the bulging of these fossae was the only symptom which gave the clue to the trouble. He gives an illustration of the bulging fossae, and reiterates the importance of this sign of plethora, particularly in pneumonia, as it shows that immediate venesection will release the excess of blood with which the heart is contending, and thus may tide the patient past the danger point.

Medizinische Klinik, Berlin

January 16, XII, No. 3, pp. 59-84

69 The Mechanical Overexcitability of the Striated Muscles as Symptom of Exhaustion in Soldiers. (Ueber das Muskelphänomen der Soldaten im Felde, das ist die mechanische Uebererregbarkeit der quergestreiften Muskulatur als Symptom der Erschöpfung.) E. Mayerhofer.

70 How Wounds Are Being Treated. (Ueber Wundbehandlung bei Kriegsverletzten.) Treiber.

71 *Paratyphoid Affections. (Paratyphöse Erkrankungen.) L. v. Korczynski. Commenced in No. 2.

72 Experimental Vaccination Against and Inoculation With Typhoid. (Typhus-Schutzimpfung und -Infektion im Tierversuch.) E. Emmerich and G. Wagner.

January 23, No. 4, pp. 85-112

73 Appendicitis and Pregnancy. (Appendicitis und Schwangerschaft.) J. Veit.

74 *The Different Causes of Falling Out of the Hair. (Die verschiedenen Ursachen der Alopecie.) R. O. Stein. Commenced in No. 3.

75 War Neuroses. (Grundsätzliches zur Kriegsneurosenfrage.) F. Mohr.

76 Comparison of Various Methods of Determining the Outline of the Heart. (Ueber die Methoden der Herzgrössenbestimmung.) A. Weber.

77 *Well Contaminated With Colon Bacilli as Cause of Pneumonia. (Durch Bacterium coli commune verseuchte Trinkwasserbrunnen als Ursache von Broncho-Pneumonien.) F. Windrath.

78 The Body Covering of the Penguin, Seal and Walrus. (Die Körperbedeckung der Pinguine, See-Elefanten und Walrosse.) A. Sokolowsky.

71. **Paratyphoid.**—Korczynski describes the clinical picture of paratyphoid gastro-enteritis as observed in a recent series of thirty-two cases and discusses treatment. It must be along the same lines as for typhoid and acute gastro-intestinal catarrh. The diarrhea usually responds to kaolin or charcoal. Prophylaxis requires sanitary supervision of provisions and notification of all cases, even single ones, tracing them to their source. The public should be shown at every opportunity the connection between food and paratyphoid infections. During the same period he encountered forty-one cases of paratyphoid pyelitis, with or without involvement of the bladder, all in women. The pyelitis develops with chills, high fever, and pain usually radiating forward and downward. Nausea and vomiting are characteristic features of the syndrome, and herpes is common. The spleen was never enlarged in these paratyphoid pyelitis cases, but a leukocytosis between 8,000 and 14,000 was constant. No local or internal measures seemed to display much efficacy. The rest and warmth of keeping constantly in bed, supplemented by copious drinking, gave most relief, and the fever never lasted for more than a week or two.

74. **The Various Causes of Falling Out of the Hair.**—Stein classifies these causes as they affect the hair itself or the hair-producing apparatus. The first group includes the infections, and the second the alopecia of neurogenous, toxic or cicatricial origin, and that from atrophy. There can be no doubt that purely nervous causes may induce the hair to drop out, or that reflex vasomotor disturbance from a fright may injure the papilla enough to kill the hair. Stein cites examples of each. Alopecia of toxic origin is general; the patches in syphilis are probably due to nests of spirochetes. Thallium given to arrest night sweats in tuberculosis is followed by a general dropping out of the hair for from one to three months. Then it grows in again. The fallen hairs are normal, showing that the alopecia is the result of toxic injury of the trophic center.

Baldness, he relates, is connected with the secretion of the sebaceous glands. The secretion of sebum is most profuse in the scalp, face and over the shoulder blades. Brow and nose are normally covered with a coating of oily sebum, possibly because these regions have no subcutaneous layer of fat and hence this extra secretion protects against excessive radiation of heat. The sebaceous glands may thus have an action antagonistic to that of the sweat glands. When the skin is chilled and "goose flesh" forms, this squeezes out the sebum and a protecting oily coat thus covers the region and prevents radiation of heat—"Muscular exertion produces sweat, mental exertion produces sebum." The development and functional activity of the sebaceous glands are intimately connected with those of the genital glands. Regular functioning of the latter causes increased secretion of sebum; this clears out the stagnating sebum and may thus cure a tendency to acne. A sudden profuse secretion of sebum may push out hairs only loosely held, and thus induce a transient falling of the hair. Stein explains further that the hair and the sebaceous gland form a unit like the leaf and flower on one stalk. If the leaf develops out of proportion, the flower suffers, and excessive functioning of the sebaceous gland is at the expense of the hair. The gland gets all the nourishment and the hair wastes away from lack of nourishment. The papilla produces weaker, poorer hairs and finally stops producing them altogether. This occurs at the points where the secretion of sebum is most pronounced and the blood supply most precarious. As the connection between the activity of the genital glands and the secretion of sebum seems to be an established fact, it suggests the explanation for the restriction of baldness to the male. There is a physiologic limit to the functioning of the genital glands in women but not in men. The assumed hormone from the genital glands which apparently stimulates the sebaceous glands to keep up their work, is continuously produced in men while in women there is no further opportunity after the menopause for this hormone to be produced, and hence the sebaceous glands in the scalp lack this constant stimulus to functioning. A woman's scalp is also shielded by the long hair, so there is less sebum needed to protect it against chilling. To sustain this theory of the mechanism of baldness, he cites among other data the observation that men of the eunuchoid type do not grow bald.

77. **The Colon Bacillus in Pneumonia.**—Windrath relates that within a period of ten to fourteen days eight of thirteen persons obtaining water from a certain well developed acute bronchopneumonia. Colon bacilli were found numerous in the drinking water. Extremely virulent colon bacilli and also scanty pneumococci were found in the sputum. There had been no rain for five weeks, and the region was much infested with rats. The pneumonia in each case had been preceded by a few days of gastro-intestinal trouble.

Mitteilungen a. d. Grenzgeb. der Med. und Chir., Jena

XXIX, No. 1, pp. 1-128. Last indexed Dec. 25, 1915, p. 2263

79 *Abnormally High or Abnormally Low Gastric Acidity Not Constant Enough for Exact Differentiation of Gastric Ulcer and Cancer. (Weitere Beiträge zur Magendiagnostik: Das Gluzinskische Verfahren, geprüft an 462 Fallen.) H. Zoepritz.

80 *Local and General Leukocytosis Reliable Sign of Internal Hemorrhage. (Leukocytose nach inneren Blutungen.) H. Dold.

81 *The Symptoms Ascribed to Duodenal Ulcer May Occur With Locations Higher Up or Lower Down. (Diagnose von Ulcus duodeni.) O. Wulff; (Id.) P. J. B. P. Van Amstel.

79. **Differentiation of Gastric Ulcer and Cancer.**—Zoepritz has been applying in 462 cases of stomach trouble Gluzinski's method for determining whether the stomach shows oversecretion of gastric juice—which, he assumes, is the rule with gastric ulcer—or abnormally low secretion—which is the result of the mucous catarrh that seems constantly to accompany and precede cancer. The findings were not encouraging. Relative secretory insufficiency occurs frequently with cancer, but may be encountered also with all other kinds of stomach affections and even with merely abdominal trouble, and in the healthy stomach. When it occurs with cancer it is not an early sign, and the cancer may be far advanced without this sign being present. It was found positive in 20.6 per cent. of the ninety-two cases of gastric ulcer or its consequences, and hence the discovery of relative secretory insufficiency by no means excludes simple ulcer. In applying such tests it would be better to give two meals that are alike rather than the test breakfast and the test meal as by the Gluzinski method.

80. **Leukocytosis with Internal Hemorrhage.**—Dold has continued his research on the leukocyte-attracting power of various biologic substances, and here relates that blood injected into the knee of a rabbit or guinea-pig has a powerful action in this respect. Sterile defibrinated blood from the animal or from another of the same species displays considerable leukotactic power when injected into the cavity in the knee. A general leukocytosis in the blood stream followed these injections made into a joint or into the peritoneum. The leukocytosis in the blood stream was even more pronounced when a sterile internal hemorrhage was induced in the animal. The discovery of leukocytosis may thus aid in the diagnosis of internal hemorrhage. In the animals it reached its highest point at about the twenty-fourth hour, and the blood count had become normal again by the fourth day thereafter. In eleven guinea-pigs the leukocyte count jumped from an average of about 4,700 to 8,312 the sixth hour and 11,250 the twenty-fourth, and then subsided to 8,843 the second day, 5,671 the third and 4,843 the fourth day. Dold calls attention to the fact that whole blood injected displayed no leukotactic power, but that this became marked when defibrinated blood was used for the injections. About 56,000 and 48,000 leukocytes were found in the knee joints of one rabbit, 38,000 and 40,000 in another. When 4 c.c. of the defibrinated blood were injected into the peritoneum of a rabbit, the blood stream showed 12,000 or 14,200 leukocytes the sixteenth hour, a guinea-pig 18,000.

81. **Differential Diagnosis of Duodenal Ulcer.**—Wulff's communication from the Copenhagen university clinic in charge of Rovsing is practically the same as the article summarized in these columns March 20, 1915, p. 1040. The clinical history is compared with the operative findings in eighteen cases of pyloric ulcer, thirty-nine of duodenal and sixty-one of gastric ulcer. A pyloric ulcer or one near the pylorus or above it was found in many cases presenting the typical Bucquoy-Moynihan set of symptoms. Neither is the Hartmann-Souppault pyloric syndrome restricted to cases with the ulcer at the pylorus; it may be lower down or higher up.

Van Amstel discusses recent literature on duodenal ulcer, and describes a case of gallstones with no tendency to gastro-intestinal ulceration in which the man suffered from distressing hunger pains at night, relieved at once by eating zwieback. When symptoms attract attention to the ulcer it is then usually in a comparatively advanced stage. The symptoms ascribed to a duodenal ulcer may be those merely of acid dyspepsia. He cites various data which emphasize that the anamnesis is rarely sufficient basis for a positive diagnosis of duodenal ulcer and normal Roentgen findings do not exclude the possibility. The ulcer is more liable to be in the duodenum than in the stomach with negative Roentgen findings. He agrees with Rovsing that the diagnosis of ulcer has been made erroneously in many cases and gastro-enterostomy made on a pure guess. Van Amstel lauds the method of introducing an electric light directly into the stomach through a minute incision when the abdomen has been opened. By this means the stomach can be inspected throughout and also the duodenum. In conclusion Van Amstel cites a number of cases of duodenal ulcer in young children. In a boy and girl of 15 and 14 the operation followed twenty-six and seventeen hours after perforation of the ulcer; both recovered. It is possible that in some cases in which stenosis of the pylorus was assumed, the trouble may really have been duodenal ulcer. In Collin's compilation of 270 cases of duodenal ulcer, 42 were in children under 10. Gastric ulcer is rare in children. One infant a month old succumbed to hemorrhage from a duodenal ulcer, but syphilis was incriminated in this case.

Münchener medizinische Wochenschrift, Munich

January 18, LXIII, No. 3, pp. 73-112

82 Provocative Gonococcus Vaccine Test. (Der diagnostische Wert der Gonokokkenvakzine.) P. Asch and Adler.

83 A Vibrio Found in Stool Suspicious of Dysentery. (Der Nachweis eines Vibrio in ruhrverdächtigem Stuhl.) F. Kutscher and Peters.

84 *Operative Treatment of Nephritis in Soldiers. (Chirurgische Behandlung der Nierenentzündung.) S. Wilk.

85 Official Directions for Prophylaxis of Diphtheria. (Die amtsärztliche Bekämpfung übertragbarer Krankheiten. I.) M. Henkel.

86 Comparative Research on the Cell Count in the Cerebrospinal Fluid. (Vergleichende Untersuchungen über die Thoma-Zeiss'sche und Fuchs-Rosenthal'sche Zählkammer bei Liquoruntersuchungen.) C. Stern.

87 *Determination of Interval Since Death by Response of Muscles to Percussion. (Die Bestimmung der Todeszeit durch die muskelmechanischen Erscheinungen.) S. Zsako.

88 Welfare Work for Maimed Soldiers. (Praktische Kriegsinvalidenfürsorge.) H. Scholl. Commenced in No. 2.

89 Paratyphoid A in the Field. E. Lehmann.

90 Malignant Measles. (Bösartigkeit der Masern bei Bosniaken.) K. Helly.

91 Characteristic Necropsy Findings in Tetanus. (Obduktionsbild bei Tetanus.) K. Helly.

92 *Acute Exophthalmic Goiter of Nervous Origin. (Einige Fälle von Hyperthyreoidismus, darunter drei von akutem Basedow bei Kriegsteilnehmern, zur Stütze der neurogenen Enstehung dieser Krankheit.) A. Rothacker.

93 Traumatic Circumscribed Ossifying Myositis. Hauber.

94 Hypnosis in Treatment of Enuresis in Soldiers on Active Service. W. Sauer.

95 Apparatus to Mobilize Stiff Joints and Exercise Muscles. (Fingerpendelapparat.) E. v. Karajan, R. B. Schwarz; (Zur medikomechanischen Behandlung der Fingerversteifungen.) G. Hohmann; (Universal-Hand- und -Finger-Mobilisierungsapparat.) E. Schepelmann; (Uebungsapparate mit abstufbarem Widerstand zur Kräftigung der Handschliessmuskeln.) K. Ramm.

96 Improved Technic for Localization of Foreign Bodies **Deep** in the Tissues. **Kunz.**

84. **Surgical Treatment of Nephritis.**—Four soldiers between 24 and 32 presented symptoms of extremely severe nephritis, which they attributed to getting chilled. No benefit was apparent from systematic internal treatment and the grave condition and dropsy kept up for months. The edema from head to foot was so extreme that the men's position in bed had to be frequently changed or the parts of the body spread out flat like a board. Decapsulation of one kidney caused a prompt change for the better. The edema subsided and in the course of a few weeks the men looked healthy and robust. In selecting the kidney for the operation, notice was taken of the side the men preferred to lie on. The kidney was found enlarged to two or three times its normal size. The cortex was blue from congestion, and it bled copiously when the capsule was separated. It was rinsed with boiled water until the bleeding stopped. The patients stood the operation well. The urine was blood stained for four days in three of the cases; in the fourth for two weeks. Under calcium chlorid then the urine became free of blood. The urine totaled six liters in the twenty-four hours by the fifth day in all but one case and by the fourteenth day in this, and there was not a trace of edema by the end of the sixth week. The man with 14: 1,000 albumin lost 30 kg. in weight, about 66 pounds, and seems to be clinically cured. The nephritis in these cases seemed to be a functional disturbance, the kidney being strangled but its tissues not irreparably altered.

87. **Estimation of the Interval Since Death by Muscular Phenomena.**—Tapping with the hammer on certain muscles elicits a reflex contraction up to from ninety to 120 minutes after death. The contraction can be elicited in the same way on the living, but it is more pronounced in the cadaver as there is no antagonistic tonus. Some of the muscles may respond for four hours after death. Tapping along the radius from the elbow downward, a point is reached where this induces (1) extension of the hand; tapping along the radius above the wrist causes (2) the thumb to bend. Tapping on the spaces between the bones in the hand causes (3) the corresponding fingers to close up. Extension of the toes is induced by tapping on the back of the foot (4), and adduction of the foot follows tapping on the leg (5) while extension occurs on tapping along the tibia at the middle third (6). A movement of the muscles up to the inguinal region occurs when the lower third of the thigh is tapped across (7), and the scapulae move toward each other when the back is tapped between the scapula and the spine. Zsako called attention in 1912 to these muscle mechanical phenomena, and the experiences in the war have confirmed and amplified his previous statements. The lack of any response testifies that death must have occurred from two to four hours before. Some of the responses may be observed even through the clothing.

92. **Neurogenous Exophthalmic Goiter.**—Rothacker reports the case of a healthy girl of 21 who developed mild exoph-

thalmic goiter when her father refused his consent to her marriage. She was married later and all the symptoms disappeared, but returned a year later when her father died. Again they subsided but the whole syndrome returned recently at her husband's death. In two other cases nervous excitement or overwork brought on the syndrome in a young man and a physician. Under rest and quiet the disturbances subsided. In three other cases described in detail the syndrome was brought on by the nervous excitement of trench warfare and subsided when the men were transferred elsewhere. Rothacker has encountered a number of similar cases, and declares that the possibility of a nervous origin for exophthalmic goiter cannot be denied. He urges those who have opportunity, to apply the ninhydrin test in cases of exophthalmic goiter.

Therapie der Gegenwart, Berlin

January, LVII, No. 1, pp. 1-40

97 Glandular Affections in Children. (Zur Kenntnis der Lymphadenopathien des kindlichen Alters und ihre Behandlung.) A. Baginsky. To be concluded in No. 2.
98 When to Operate in Acute Gallstone Colic. (Wie erkennen und wann behandeln wir operativ den akuten Gallenkolikanfall?) H. Kehr. To be concluded in No. 2.
99 *Objective Determination and Treatment of Certain Kinds of Nervous Injury. (Ueber ein neues Verfahren zur objektiven Feststellung bestimmter nervöser Störungen und ihre Beseitigung.) E. Weber.
100 Eczema. (Ueber Ekzembehandlung.) C. Bruhns.

99. Objective Sign of Nervous Injury.—Weber's previous communication on this subject was summarized in THE JOURNAL, June 5, 1915, p. 1949. The extensive opportunities afforded by the war for further research on nervous upsets have sustained his theory and confirmed the benefit of treatment based thereon. He applies tests which induce dilatation of the blood vessels, and then registers the extent of the dilatation. He has established, he states, that the dilatation is of central origin and hence occurs over the whole body. Also that the response occurs always in the same manner in health, while certain nervous affections modify it in a characteristic manner. He records the findings with the plethysmograph, having adapted this to use for the face and abdominal organs as well as for the limbs. The respiration rate is recorded at the same time. With concussion of the brain there is constriction of the vessels, instead of the natural dilatation. His method enables the benefit from treatment to be followed step by step by objective findings—a rare privilege. Not drugs but physical measures are beneficial, and chief among these in its effect on the centers controlling the vessels is the alternating douche, switching abruptly from cold to hot and back again. The benefit is felt particularly in the vessels of the brain after concussion; headache and vertigo improve at once and the benefit persists for hours. When the headache returns, the objective findings veer to the pathologic at the same time. On repeating the douches the benefit lasts longer and longer until a week without treatment elapses without symptoms, when the cure may be regarded as complete. The alternating douches are given twice a day in treatment of concussion of the brain, each from five to eight minutes long, changing from hot to cold and back again every half minute. When these douches are impracticable, nearly as good effects can be realized by applying ice bags alternately to various sensitive areas on the body, changing about every two minutes. He found that after application of superheated air to the limb and also after general anesthesia, the vessel centers gave the pathologic response to the test over a surprisingly long period. This pathologic response was also the rule in toxic and infectious conditions, but was never found in nonorganic affections, traumatic neuroses, hysteria, epilepsy or psychoses.

Wiener klinische Wochenschrift, Vienna

January 13, XXIX, No. 2, pp. 33-60

101 *Serodiagnosis of Typhus. (Zur serologischen Diagnose des Fleckfiebers.) E. Weil and A. Felix.
102 Differential Diagnosis Between Typhus and Typhoid. (Zur Differential-diagnose zwischen Typhus exanthematicus und abdominalis.) P. Habetin.
103 *Theoretical Study of Action of Antitetanus Serum. F. Hamburger.
104 Removal of Projectiles in Face or Ear Region. (Die Klinik und operative Entfernung von Projektilen in Fällen von Steckschüssen der Ohrgegend und des Gesichtsschädels.) G. Alexander.
105 First Measures for Fractured Femur. (Versorgung der Oberschenkelfrakturen im Felde, zugleich eine Instruktion für den Feldarzt.) H. v. Haberer.

January 20, No. 3, pp. 61-88

106 Trauma as Cause of Glaucoma. (Trauma als Urheber eines primären Glaukoms.) W. Goldzieher.
107 Alien Serums Do Not Influence Cancers. (Kritische Studien zur experimentellen Therapie maligner Neoplasmen. II.) S. Fränkel and E. Fürer.
108 *Vaccine Therapy; Mouse Typhoid Bacillus Vaccine in Treatment of Clinical Typhoid. (Erfahrungen über Praxis und Theorie der Vakzinetherapie.) L. Zupnik, A. v. Müller and K. Leiner.
109 War Wounds of the Urogenital Apparatus. E. Haim.
110 Leverage Splints. (Hebelschienen.) G. Engelmann.
111 War and Tuberculosis. (Krieg und Tuberkulosebekämpfung.) A. Götzl.

101. Serodiagnosis of Typhus.—Weil and Felix had thirty-three cases of typhus in Galicia in which the clinical picture and the fever curve were typical for typhus but the agglutination test and deviation of complement were typical for typhoid. Necropsy failed to reveal typhoid lesions, but as cases of true typhoid have been published in which no typical lesions could be detected, the negative findings do not absolutely exclude typhoid.

103. Antitetanus Serum.—Hamburger calls attention to the way in which tetanus treated early with large doses improves and then keeps about on the same plane for from five to seven days. Then comes an exacerbation and death soon follows unless large amounts of antitetanus serum are injected anew, which may save the patient. This stationary plane and sudden exacerbation from the fifth to the seventh day in tetanus, and often likewise in diphtheria, correspond to what we know of the mode of elimination of the alien albumin to which the antitoxin is bound. He refers to published research which demonstrated that the alien albumin persisted in the blood for four, five or six days and then disappeared suddenly from it, by a kind of crisis. The stationary phase demonstrates that the antitoxin is able to hold the disease in check for this long. It is important, therefore, to give more antitoxin and in sufficient amounts in time to forestall the exacerbation and ward it off. He suggests that if the antitoxin were given along with a large amount of plain serum, the antitoxin might be spared more to exert its specific action and be retained longer. His (theoretical) treatment of tetanus would therefore be 200 units brought up to 300 c.c. with normal horse serum. Five days later half of this amount should be injected anew and possibly repeated the sixth and seventh days. No opportunity for applying this method in practice has developed as yet.

108. Treatment of Typhoid with Mouse Typhoid Vaccine.—Zupnik and his co-workers gave vaccine therapy an extensive trial in 145 cases of various infectious diseases, including 112 typhoid cases. The curative results were meager by subcutaneous injection, but the results, they relate, were very encouraging when the vaccines were injected repeatedly in small amounts. It was found that a vaccine made from mouse typhoid bacilli seemed to influence clinical typhoid as effectually as the specific vaccine, while it did not cause such severe by-effects as seem to be inseparable from the latter in intravenous injection. The chill is brief and slight and the symptoms on the part of the heart, the dyspnea, cyanosis and acceleration of the pulse are materially milder, not causing grounds for alarm. This method of treatment was applied without discrimination to all cases, even the very severe, except those with bad hearts to begin with. The only death that occurred in connection with the vaccine therapy was that of a young man with typhoid in such a severe form that the vaccine was apparently the last resort, although the heart was known to be defective. In this case a chill lasting half an hour followed the intravenous injection of 0.5 c.c. of the mouse typhoid vaccine, representing twelve million germs. The pulse ran up and about three hours after the injection there was extremely intense delirium for an hour and a quarter and then five brief convulsions, with death the sixth hour after the injection, about the eighth day of typhoid. In three other cases delirium developed after the injection, mild

in two, but severe and persistent in the third. These delirious patients had to be held down in bed by force. The mouse typhoid vaccine induces production of antibodies; the therapeutic dose ranges from eight to twenty million germs. A tentative preliminary injection of four millions will reveal any special susceptibility. If this is borne well, forty-eight hours later the therapeutic dose of eight millions is given. The response of the fever to any vaccine is less pronounced in malaria and relapsing fever and in exceptionally severe typhoid. The vaccine seems to influence favorably the whole disease process, but the mechanism for this is still a mystery. The vaccines that may be used in typhoid can be classed as those of the typhoid, colon and dysentery bacilli type, and the mouse typhoid and meningococci type.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 2, XXXVII, No. 1, pp. 1-16

112 Notes From a Field Hospital. (Note di Chirurgia di guerra.) G. Campora.

January 27, No. 8, pp. 113-128

113 *Frostbite. (Brevi considerazioni pratiche sulle congelazioni ai piedi con speciale riguardo alle lesioni di primo e secondo grado.) C. Longo.

114 Arguments For and Against Inclusion of Pharmaceuticals in the Pharmacopeia. (Le specialita nella Farmacopeia Ufficiale?) E. Villa.

113. **Frostbite.**—Longo emphasizes the value of a general tonic to improve the circulation as a whole after the feet have been frostbitten. He has had surprising results, he says, with iodin: 5 gm. of potassium iodid and 0.5 gm. metallic iodin with distilled water to make 20 c.c., gradually increasing the number of drops given. Epistaxis frequently accompanies frostbite, and it may be absolutely uncontrollable for a time. The best treatment he has found for this is a 10 per cent. solution of gelatin by the mouth.

Policlinico, Rome

January 23, XXIII, No. 4, pp. 101-132

115 Wounds of the Throat. (Alcune considerazioni sulle lesioni e sui traumi della laringe e della trachea in guerra.) G. Ferreri.

116 *The Functional Vasomotor Syndrome. D. Consorti.

January 30, No. 5, pp. 133-164

117 Orthopedic Treatment of Fractured Jaw in War. (Sulla cura ortopedica delle fratture della mandibola in guerra.) A. Beretta and C. Cavina.

118 Present Status of Antityphoid Vaccination. T. Silvestri.

116. **The Functional Vasomotor Syndrome.**—Consorti says that a constitutional predisposition, a vasomotor ataxia, is responsible for the fluctuations in the vasomotor system under the influence of toxins. Consorti emphasizes that this is not an actual malady in itself, but there is always some nervous predisposition if not actual vasomotor ataxia. It is traditional that the hysteric and neurasthenic are liable to severe upsets in the balance of the circulatory system. The chief causes liable to bring such upsets are tobacco, alcohol and other intoxications and digestive derangement. Nicotin acts on the blood vessels and is the principal if not the only cause of vasomotor angina pectoris as well as of the organic. Chronic intoxication from nicotin generally induces constriction of the vessels, but it may cause dilatation, either active or from paresis of the vessels. With this predisposition plus some chronic intoxication, any slight cause is liable to bring on hyperemia of the brain, with dizziness, oppression in the head and a dazed condition. An extra long walk or a too abundant meal may induce ischemia of the brain from abnormally low blood pressure, tachycardia and syncope. If the syndrome is acquired from some preventable cause, removal of the latter may restore conditions to normal, but if the cause continues to act, organic lesions may become installed in time. There is no doubt that arteriosclerosis is favored by active vasodilatation and hypertension. But at first, under repose and quiet, the syndrome subsides without leaving a trace. Many cases of noises in the ear, transient deafness, bronchial affections and asthma are maintained by active and paretic dilatation of the bronchial vessels. There may be a neurosis of the respiratory organs—actual asthma. It often happens that one region may show vasoconstriction and another vasodilation at the same time. Headache is frequent, as also insomnia; there may be dyspepsia and bowel spasms; pain in the liver, radiating to the shoulder, is not uncommon, or there may be pain suggesting gallstones. Other cases may present symptoms suggesting sclerosis of the kidney, but after removal of the toxic cause the urine returns to normal. This change may occur suddenly and no cause for the transformation can be detected. In short, there is not an organ that may not be the seat of congestion from vasomotor disturbance; differentiation is aided by the instability of the phenomena. In treatment the special organs involved should be left unmolested while everything should be done to tone up and strengthen the nervous system. Regular work, tranquil surroundings, nourishing, easily digested food are the main reliance, abstaining from tobacco, alcohol and strong coffee. Some persons cannot stand even small amounts of alcohol or tobacco without vascular erethism, either from an idiosyncrasy or a cumulative action. Consorti says in conclusion that when the symptoms indicate paretic dilatation of the vessels, small doses of strychnin may prove useful. When the symptoms indicate vasoconstriction, trinitrin may be required. Mild hydrotherapy is a good adjuvant to the general measures, using cold when paretic vasodilatation predominates.

Brazil-Medico, Rio de Janeiro

January 8, XXX, No. 2, pp. 9-16

119 *Beriberi. L. Freire.

119. **Beriberi.**—Freire relates that Brazil is not the hotbed of beriberi formerly assumed. What has gone by that name in the Amazon region and elsewhere has lately been proved by C. Chagas' official investigation to be a hitherto undescribed form of quartan malaria, characterized by a rapid and pernicious course and pretibial edema. In all his research he never encountered anything of the nature of malarial polyneuritis and nothing to suggest beriberi. When there is polyneuritis with malaria plasmodia found in the blood, the trouble is beriberi in a malaria subject. Nothing to suggest polyneuritis is ever seen in the hundreds of patients with hookworm at the Rio hospitals. Freire adds that no direct contagion of beriberi from man to man is known, although new foci can be started elsewhere from an endemic focus. Japan had no beriberi until it opened its gates to commerce with India and the islands. In turn, the Japanese carried beriberi to Australia. All other forms of polyneuritis are restricted to certain habits or trades, such as the abuse of alcohol, and lead poisoning.

A beriberi focus once established becomes fixed, in hot and moist climates at least. Freire is convinced that these facts can be explained only by an intermediate host for propagation of its germ. A closed institution, such as a hospital or asylum which once becomes a focus of beriberi, causes such devastation that some persons regard it as an actual crime to establish a general hospital in localities where beriberi is prevalent. In many instances the patients in such have had to be dispersed and the institution closed. A hospital for beriberi patients should be of the farm colony type. Another peculiar feature of beriberi is that it may attack only one section of a town. In the large Singapore epidemic only men had it; not one woman was affected. In one tenement building all those affected were on one story. Infants nursing women with beriberi acquired it but threw it off as soon as they were nursed by healthy women.

He regards the rice theory as having had its day; the people who live exclusively on rice generally are subject to privations of all kinds and lack of hygiene. [A study of beriberi in Cuba was presented by Lebredo at the recent Pan-American Scientific Congress. He said that the disease was prevalent in Cuba in the days of slavery, but the first careful study of it was made in 1911 when an epidemic of beriberi appeared in the prison in the Santa Clara province. Animals fed with the rice that had been used developed usually a syndrome resembling beriberi. The clinical and experimental data intimated that the rice contained some starch-attacking germ which generated a poison. This assumption has been sustained by further research, another epidemic occurring in the same prison in June, 1912, in April, 1913, and also in 1914 in the hospital of the United Fruit

Company, and in 1915 among the crew of an English ship from India. In each instance, when the epidemic was virulent, the beriberi assuming the fulminating form, the animals developed also virulent beriberi symptoms when fed with rice from the supply that had been used. The supposed starch-modifying germ isolated from the rice in the most virulent epidemics had spores that resisted boiling for twenty minutes. Lebredo is inclined to think that this germ is found naturally in rice and does no harm so long as the starch is protected by the hull. The pericarp alone is probably ample protection for the starch. Lebredo is chief of the laboratory of the Public Health Service in Cuba. His article opens the new year in the *Revista de Medicina de Habana.*]

Semana Medica, Buenos Aires

Dec. 9, 1915, XXII, No. 49, pp. 687-714

120 Midwives and Midwifery Training School at Buenos Aires. (La partera de Buenos Aires y la escuela de parteras.) A. Chueco.
121 The Trained Nurse. (Inauguracion de un curso sobre asistencia de enfermos y primeros auxilios.) E. Obejero.

Russkiy Vrach, Petrograd

1915, XIV, No. 30, pp. 697-720

122 Metal Netting Splints. G. I. Turner.
123 Shield-Like Syphilids. (Syphilide en corymbe.) V. I. Terebinsky.
124 Treatment of Clavicle Fractures. (Novii sposob lietcheniya perelomov klutchitzi.) M. A. Konosevitch.
125 *Action of Digitalis on Peripheral Blood Vessels. J. V. Golovinsky.
126 *Skin Tuberculin Test in Surgical Practice. A. Y. Zitronblatt.
127 *The Initial Stage of Leishmaniosis. V. L. Yakimoff.

No. 48, pp. 1129-1152

128 *Typhus Fever in the Russian Army. I. I. Shirokogoroff.

No. 49, pp. 1153-1176

129 The Iron Atoms in Animal Tissues, and Their Physiologic Value. A. I. Danileffsky. Commenced in No. 48.
130 *Cardiovascular Insufficiency in Soldiers. D. D. Pletneff.
131 *The Chemical Activity of the Stomach in Relation to the Symptoms of Duodenal Ulcer. S. G. Mintz. Commenced in No. 47.

125. **Action of Digitalis on Peripheral Blood Vessels.**—Golovinsky studied the action of digitalis on the peripheral vessels of dogs, rabbits and frogs. He used digipuratum in various concentrations (1:5,000 and 1:1,000) which he passed in Ringer's or Locke fluid through the isolated ears (Kravkoff's method) or through the splanchnic and the portal systems (Fröhlich's method). He found that solutions of digipuratum in doses that may have a therapeutic effect do not affect the lumen of the peripheral vessels of the regions examined, skin, splanchnic or portal systems, while toxic doses caused dilatation. The increased blood pressure from digitalis is thus due to the increased cardiac activity.

120. **Skin Tuberculin Test in Surgical Tuberculosis.**—Zitronblatt studied v. Pirquet's test on 256 patients; 92 had visible tuberculosis, mostly of surgical character, 27 were merely suspects, and 137 were clinically free from tuberculous symptoms. He used Koch's old tuberculin in 25, 10, 5 and 0,5 per cent. solutions. For control vaccination he sometimes used bouillon. He found that the weaker the solution of tuberculin, the weaker was the reaction, the more indefinite were the results. His conclusion therefore is that Pirquet's test has no practical value for the diagnosis of surgical tuberculosis.

127. **The Initial Period in Leishmaniosis.**—The initial stage of leishmaniosis in mice and dogs may be of but a few days' duration. Its length depends on the quantity of the injected parasites, on the age of the infected animal, and possibly on whether the virus was obtained from man or dogs.

128. **Typhus Fever in the Russian Army.**—Shirokogoroff found the following measures efficient in the campaign against typhus fever in the Russian army: (1) instruction of soldiers in regard to the rôle of insects (lice) in transmitting the infection; (2) every possible means to be used to keep the body clean, providing the soldiers with sufficient amounts of underwear, soap, etc.; (3) watching carefully for the presence of epidemic disease among the population where soldiers are stationed; suspicious lodgings should be condemned; (4) in case of an epidemic in the rear of the army, a twelve or fifteen day quarantine is established, the clothing, lodgings and the soldiers are made free of insects; the temperature is carefully watched, for the purpose of isolating the newly diseased persons; (5) in case the disease breaks out at the front, the infected men are immediately removed to the rear for the purpose of thorough unlousing and medical care.

130. **Cardiovascular Disturbances in Soldiers.**—Pletneff found among Russian and Austrian soldiers numerous cases of cardiovascular insufficiency in the form of old valvular heart lesions, myocarditis and arteriosclerosis. Arteriosclerosis and an insufficiently developed aorta and heart gave the largest percentage of cardiopaths. Next in frequency, the cause of the cardiovascular insufficiency was found to be a lack of proper physical harmony between single organs. In healthy persons the cardiovascular insufficiency easily arises from lack of sufficient muscular exercise, and proper physical training.

131. **The Chemism of the Stomach with Duodenal Ulcer.**—Mintz summarizes the conclusions from his clinical experiences and research as follows: 1. Hyperacidity, namely, disturbance in the "leveling" property of the stomach, is a constant phenomenon with a typical duodenal ulcer. By "leveling" property he means the remarkable faculty possessed by the normal stomach of keeping the absolute acidity at the same level. (See summary of his previous work, Abstract 135 in THE JOURNAL, Sept. 18, 1915, p. 1067.) 2. The tardy pain is explained by the facts that in beginning of digestion, the gastric chemical function is normal. Several hours after the intake of food, when the larger portion of the gastric contents has left the stomach, the leveling properties of the latter are disturbed and the gastric acidity begins to rise, causing spasm of the pylorus and attacks of pain. 3. The pain-soothing effect of intake of food with duodenal ulcer can be explained by the lessened acidity of the stomach, the hydrochloric acid becoming combined with the food. 4. The pain-soothing action of alkalies is due to the neutralization of the excess of hydrochloric acid. The similar action from hydrochloric acid depends on its stimulation of the leveling activity of the stomach, that is, of the mechanism for self-regulation of acid secretion. 5. The six hour bismuth residue, that is, the amount retained in the stomach for six hours, with duodenal ulcer, is due to the reflex pyloric spasm. 6. The excessive peristalsis of the stomach and its increased motor activity in cases of duodenal ulcer, can be explained by the fact that the duodenal mucosa is flushed at the end of the gastric digestion by the overacid stomach contents. With gastric ulcer, normal or subnormal acidity of the stomach contents has been the rule in his experience. Hypersecretion was most pronounced with ulcer near the pylorus. He gives the clinical details of twenty-four operative cases of duodenal ulcer.

Hygiea, Stockholm

LXXVIII, No. 1, pp. 1-96

132 Psychanalysis. (Kritiska reflexioner över de psykoanalytiska teorierna.) O. Kinberg.
133 Ulcerating Skin Disease of Gangrenous Type, Suggesting Gangrenous Ecthyma. (Ett fall av tumorbildande, ulcererande hudsjukdom av obekant art, i vissa avseenden liknande mycosis fungoides.) S. Ström.
134 Impressions of America. (Något om kirurgi, läkare och sjukhusvasende i Amerika.). A. Troell.

Ugeskrift for Læger, Copenhagen

January 27, LXXVIII, No. 4, pp. 83-122

135 *Case of Acute Heart Block in Young Clerk. L. Laursen.

135. **Acute Heart Block.**—The young man was healthy and had never had scarlet fever, diphtheria or acute articular rheumatism and was not guilty of excesses of any kind. He complained of headache for two weeks, then had a sore throat and pains in the feet but no fever. As he was about to mount his bicycle he grew suddenly dizzy and fell, and the dizziness returned the next day or so, with oppression in the heart region. Examination revealed total heart block. Laursen thinks that some otherwise latent rheumatism infection was responsible for this complete dissociation of conduction between auricle and ventricle. The subsidence of the heart block under treatment as for acute rheumatism confirmed this assumption of an indolent rheumatic infection localizing in the heart.